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[136] prove that they are, and always have been, fairly numerous.[1] The pig hunts are most frequent during the rains, not only because these animals are then more plentiful and in better condition, but because it is no longer the *râp-wâb-*, or season of abundance of jungle fruit and honey; from this, however, it must not be inferred that scarcity is then experienced, for those who choose to help themselves need never be in want.

11. During the cool season, *pâ·par-wâb-*,[2] the people themselves are alleged to become noticeably thinner: this they attribute not to a deficiency of food, but to the meagre condition of the pigs, which are then breeding, and to the fact that the edible roots (or yams), and other fruits then in season are not fattening. There are six varieties of esculent roots, viz.: the *gō·no-*, *châ·ti-*, *kâd-*,[3] *bō·to-*, *mal·ag-*, and *tăg·i-*, which are eaten alone (preferably cold), and not with meat; their chief difference consists in the extra care in preparation which some require, in consequence of their very acrid flavour.

12. The *gō·no-* is cooked in three ways: (*a*) it is placed on the fire in the condition in which it is found until it is soft, when it is freed from the burnt earth and eaten; (*b*) the root, after being washed, is cut up into small pieces and boiled in a pot; and (*c*) after being washed and cut up, the pieces are wrapped in large leaves and baked on burning logs.

13. The *châ·ti-* is cooked in the first of the above-mentioned methods, or by surrounding it with hot stones,[4] and covering the whole with leaves and weights, in order to confine the heat as much as possible.

14. The *kâd-* is first cooked as found, the skin is then peeled off, and a number of thin slices are cut and placed in water for a couple of days, so as to lessen the bitterness of its flavour; afterwards it is either baked in leaves or boiled, as already described in speaking of the *gō·no-*.

15. The other three varieties are never boiled, but are placed on the fire without leaves, and the outer skin is removed before they are eaten.

16. The seed of a species of sea-weed, known to them as *tô·no-tòng-*, on which turtles and dugongs feed, and which can only be obtained in small quantities, is carefully cooked and eaten as a relish.

[1] In his examination of a kitchen-midden near Port Blair harbour the late Dr. Stoliczka recorded that "the large number of bones of the Andaman pig is remarkable."

[2] This is the period between the rains and the dry season, and lasts about ten weeks, between the middle of November and the middle of February.

[3] The *gō·no-*, *châ·ti-*, and *kâd-*, are very plentiful during the cool season, and are much relished.

[4] *Vide post* "Stone Implements," paragraph 1.

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17. The fruit of three varieties of mangrove,[1] known to them as *jū·mu-*,[2] *ngâ·tya-*, and *bá·taga-*, are occasionally eaten, but only by way of change; they are prepared like the *kád-* (*vide* above).

18. The following table contains a fairly complete list of the different kinds of food eaten by the Andamanese during the varying seasons of the year; their ordinary diet, as will be gathered from the foregoing, consists of pigs,[3] paradoxurus, iguanas,[4] eggs of the hawkbill turtle, turtles, shell and other sea-fish and prawns, with occasional treats of dugong and porpoise,[5] and for married persons certain birds, already named: the fruit of the *Pandanus* and black honey must also be added, besides which, during the dry season, fresh-water fish, shell-fish, eggs of the green turtle, honey, the bee-bread, and that portion of the comb in which the larvæ are found, as well as the *Caryota sobolifera*, yams, and numerous fruits, about to be named, are eaten with great relish; while during the rains they vary their fare with preserved seeds of the *Artocarpus chaplasha*, *Semecarpus*,[6] and the fallen seeds of the *Entada pursætha*,[7] with three grubs, viz.: the *bū·tu-*, *pī·rigi-*, and the larvæ of the Great Capricornis beetle (*òi·yum-*), and certain fruits. Although on one occasion I saw a man (a member of the *·á·kà-·ked·e-* tribe) actually eat an *òi·yum-* alive (!) their usual practice is to collect a quantity of the above-named insects and to wrap them up in leaves and place them on the burning embers, turning the bundle from time to time, so that its contents may be thoroughly cooked, whereupon, in the case of the *bū·tu-*, after breaking off the tails, they are consumed with evident gusto.[8]

19. The native names[9] of most of the fruits in season during the dry (*a*), wet and cool (*b*) months are:—

[1] Some terrible calamity, such as another Deluge, would result, so they say, from any one rashly presuming to taste the fruit of a certain species of mangrove, called *tó·kal-*.

[2] *Bruguiera gymnorhiza*.

[3] Not only are the sows eaten when with young, but even their unborn litter is not rejected.

[4] Iguanas and paradoxuri are in better condition during the rains, and are consequently more eaten at that season.

[5] There are special restrictions connected with eating both the dugong and porpoise for the first time (*vide post* "Tabu," paragraph 2).

[6] *Vide* paragraph 32.

[7] *Vide ante* "Religious Beliefs, &c.," paragraph 12.

[8] The *òi·yum-* is found in newly fallen logs, and they say that they do not treat it like the *bū·tu-*—viz., in breaking off its tail—because it does not live in such rotten Gurjon trees.

[9] The botanical names of most of these, as well as of many others, will be found in Appendix L.

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(a)

either cooked or uncooked.

*‡mâng-
*‡ī·til-
dō·gota-
jâ-
ū·dala-
kón-
§châ·kan-
*bō·to-kó·ko-
kū·nra-
§pū·lia-
§pū·lain-
*pi·dga-
§gel·dim-
*ó·rta-tāt-
*†§chuij-
kār·ega-
ūd-
§ñgē·bēr-
§ē·mej-
*eng·ara-
§lō·gaj-

(N.B.—The best fruits, and those which are most abundant, are in season during these months and at the commencement of the rains.)

(b)

†ó·ropa-
§pâ-
*†kai-
†§kai·ta-
†chób-
†ō·dorma-
*d·bnga-
§ { jū·mu-, ngâ·tya-, bâ·taga- }
*kâ·pa-
pi·cha-
§pai·tla-
*kār·ed-[1]
§* jang·ma-[2]
*jī·ni-
†pū·ta-
*pór-
*ám-
*†mā·twin-tâ·tib-
*eng·ara-

During the *pâ·par-wdò-* (cool season) and *yē·re-bō·do-* (dry months) the six varieties of edible roots mentioned above (*vide* paragraph 11) are also eaten.

(It will be understood that those fruits that are unmarked in the above list are eaten in the ordinary way).

20. Many fruits they merely suck for the sake of the flavour ;[3] others are eaten with fine wood-ash,[4] taken from the hut fires *in lieu of sugar*, to diminish their extreme acidity,[5] while a few are cooked,[6] and the stones of several[7] are cracked for the sake of their kernels. The favourite fruits are *dō·gota-*, *ó·ropa-*, *kón-*, *chób-*, *jâ-*, *pâ-*, *kai·ta-*, *kār·ega-*, *châ·kan-*, *jū·mu-*, *ngâ·tya-*, *bâ·taga-*, *ñgē·bēr-*, *pū·lia-*, and *pū·lain-*.

21. The fruit of the *ñgē·bēr-*, *châ·kan-*, *pū·lia-*, *pū·lain-*, *pai·tla-*, *gel·dim-*, *lō·gaj-*, and the seeds of the three above-named varieties of mangrove (*i.e.*, *jū·mu-*, *ngâ·tya-*, and *bâ·taga-*), are freed from their husk or rind and boiled in water until quite soft ; when cold they are cut in slices, and left to soak for two days or more in salt or fresh water, after which they are baked in leaves, or again boiled in a *būj-*.

22. The Andamanese are, now-a-days at least,[8] extremely particular over the cooking of their food, and will not eat certain

[1] This is a small yellow fruit, the seed of which, after being sucked, is broken, and the outer portion eaten while the kernel is thrown away.

[2] This is a small red fruit, about the size of a bean or filbert, containing one stone ; it is wrapped in leaves and baked, because they say that if eaten uncooked it would cause them to forget their way in the jungle, as well as entire loss of memory on all points.

[3] These are marked in the preceding paragraph by a *

[4] Their immunity from scurvy may not improbably be due to the chemical combination of the acid, contained in many of the fruits, with the potash of the burnt wood.

[5] These are marked in the preceding paragraph by a †.

[6] These are marked in the preceding paragraph by a §.

[7] These are marked in the preceding paragraph by a ‡.

[8] They are very expert in spearing their fish, which they consume in a half-cooked state (Anderson) ; Symes also writes that " they throw the food on the fire, and devour it half broiled."

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implement, and all take a share in the feast.[1] Meat thus prepared will keep good for several days.

32. I alluded just now to their method of preparing the seeds of the *Semecarpus* and *Artocarpus chaplasha* for consumption during the rains; it is as follows:—The outer husk, or skin, having been removed, a quantity of the fruit is placed on a wooden platter, and each person present renders assistance by partially sucking (!) the various pieces, which, after this preliminary process, are half boiled in water, and then wrapped up in large bundles of leaves, and buried in moist soil; no mark is made over the spot, but there appears to be no fear of forgetting it, though several weeks usually elapse before the monsoon breaks, and these decaying deposits are dug up, when the smell, as may be supposed, is most offensive to all but those who are to the manner born; by them, however, strange to relate, it is evidently highly appreciated. The next stage through which the seeds have to pass consists in freeing them in water from the decaying matter, and drying them in the sun, or over the fire, where they are left in nets (*châ·panga-*[2]) or leaves until required for use, when they are again baked. With this exception no food is dried in the sun, nor is anything salted or intentionally smoked, though this last cannot fail to be, to some extent, the result of their mode of storing food, as described in the previous paragraph.

33. Besides the various fruits already mentioned as in season during the dry months, yams and honey are very abundant; as their method of treating both fruits and yams has been already described, it now remains for me to notice the ingenious way in which they procure honey, and to name the special trees which, flowering in succession, afford ample material from whence the bees produce a more or less abundant store.

34. At the close of the monsoon one of the large jungle trees, called by them *rár-* (*Eugenia* sp.), comes into bloom, and though no honey is made from its flowers, it is said to act beneficially on the bees as a purgative, and to prepare them for the commencement of the honey season.[3] The *lē·kera-* (*Leguminosæ* sp.), blossoming a little later, is the first honey-yielding flower; the *dū·mla-*,[4] *chī·lib-* (? *Diospyros densiflora*), *ó·ro-* (*Chickrassia tabularis*), and *châ·dak-* (*Rubiaceæ*) coming next into season, enable the bees to produce large combs, but the finest are found after the *pâ-* (*Semecarpus*), *bâ·jâ-* (*Sterculia* (?) *villosa*), *yē·re-* (*Sterculia* sp.), *jī·dga-*,[4] have

[1] *Vide post* "Hunting and Fishing," paragraphs 30 and 31.
[2] *Vide* Appendix B, item 22.
[3] Hence *re·rke*, (to) clean.
[4] The botanical names of these have not as yet been ascertained.

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blossomed: this is considered the height of the honey season, and is called *lad·u chàu-*.[1] It appears that on moonlight nights just at this time the bees consume a great portion of their honey, so that the "junglees" declare it to be useless to go for combs, either by day or night, until the moon has sensibly waned.

35. When about to make a raid on the hives, the Andamanese procure a certain plant, believed to be of the *Alpinia* species, called *jī·ni-*, and having stripped off the leaves, chew the stem and smear the essence thus extracted over their bodies; the mouth is also filled with the same juice, and thus armed *cap-à-pie* they proceed to disperse the bees, who, on attempting to attack them, are at once repelled by the obnoxious odour of the *jī·ni-*, emitted in a fine spray from the mouths, and also attaching to the persons of their despoilers, who sometimes make further use of the chewed stalks of the offensive plant in driving off the last remaining defenders of the hive.

36. Small combs[2] of both the white and black honey are commonly obtainable till about September—*i.e.*, so long as the *Dipterocarpus lævis*, the *Pterocarpus dalbergioides*, and a few other trees continue to blossom.[3]

37. While I had charge of the homes (and probably ever since), a large sum was annually realised by the aborigines towards their support from the sale of honey thus obtained to the free residents at Port Blair. So much indeed did they collect that we were able to store it in barrels and bottles, and generally found we had sufficient to meet all demands until the approach of the following season.

**Tabu.**—1. Besides the articles of food from which all abstain during the *â·kà-yáp-*,[4] we have seen that there are certain fruits, edible roots, &c., which, in supposed obedience to *Pū·luga-*'s commands, are not gathered at prescribed seasons of the year,[5] and that mourners[6] (*â·kà-ōg-*) also deny themselves by refusing to partake of their favourite viands until after the *t'ī-tó·latnga-*;[7] but beyond these restrictions, which are of general application,

[1] *Vide* Appendix H.

[2] The combs produced from the blossoms of the under-mentioned trees—*i.e.*: *.tá·tib-* (*Croton argyratus*), *.bi·bi-* (*Terminalia* (?) *citrina*), and *.bal·ya-* are much less plentiful, and they are smaller; this is also found to be the case with those made from the *.chá·langa-* (*Pterocarpus dalbergioides*), *.mó·nag-* (*Messua ferrea*), *.ē·mej-* (*Terminalia bialata*), *.já-* (*Gluta longipetiolata*), and *.púb-* (*Lagerstræmia hypoleuca* (?) *regina*).

[3] As they are not, in their savage state, in the habit of storing honey, they are without any but the black honey during a great portion of the year.

[4] *Vide ante* "Initiatory Ceremonies," paragraphs 2 and 10.

[5] *Vide ante* "Superstitions," paragraph 12.

[6] If the mourners are *ē·rem-tá·ga-* they abstain from pork, and if they are *àrvó·to-* they abjure turtle (*vide ante* "Death and Burial," paragraph 4).

[7] *Vide ante* "Death and Burial," paragraph 7.

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## APPENDIX L.

### List of some of the Trees and Plants in the Andaman Jungles.

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| Andamanese name. | Botanical name.[1] | Remarks. |
|---|---|---|
| *á·bnga-* (*a*) .. .. | Dillenia pilosa. | |
| *ain·ya-* .. .. .. | Dipterocarpus alatus . | (Burm.) *Kanyin ngi.* |
| *al·aba-* .. .. .. | Melochia velutina .. | (*vide* Appendix B, item 66) |
| *ám-* (*a*) (*e*) .. .. | Calamus, sp. No. 1. | |
| *á·para-* (*d*) (*k*) .. .. Also *á·bad-* | Ptychosperma Kuhlii .. | |
| *á·raga-* .. .. .. .. .. .. .. | | (Hindi.) *Palewa.* (Burm.) *Bí·bia.* |
| *á·rain-* (*m*) .. .. | Dipterocarpus lævis .. | (Burm.) *Kanyin byu-*, Gurjon oil tree. |
| *bad·a-* (*o*) .. .. .. | Rhizophora conjugata .. | (Burm.) *Byáma.* |
| *bad·ar-* (*a*) .. .. | Sometia tomentosa (?) | |
| *bai·la-* (*a*) (*b*) . . | Terminalia procera .. | (Burm.) *Bambway byu.* |
| *bá·ja-* (*y*) .. .. . | Sterculia (? villosa) .. | (Burm.) *Sabu-basi.* |
| *bá·lak-* .. .. .. | .. .. .. | (*vide* Part II, "Religious Beliefs," paragraph 19. |
| *bal·ya-* .. .. .. | | |
| *bá·rata-* (*c*) .. .. | Caryota sobolifera. | |
| *bá·taga-* (*i*) .. .. | Feriops Candolleana .. | (Burm.) *Madamá.* |
| *bé·lu-* .. .. .. | Natsatium herpestes. | |
| *bé·ma-* .. .. .. | Albizzia Lebbek (?) .. | (Burm.) *Kák·ko* |
| *bé·rekád-* .. .. .. | Glycosinis pentaphylla. | |
| *bé·rewi-* .. .. . | Claoxylon affine (?) | |
| *bí·bi-* .. .. . | Terminalia (? citrina). | |
| *bí·riga-* .. .. . | Planchonia valida .. | (Burm) *Bambway ngi.* |
| *bí·rtát-* .. .. .. | | |
| *bí·tim-* .. .. . | Sophora sp. | |
| *ból-* (*r*) .. .. .. | Calamus sp. .. . | Ground rattan. |
| *bó·ma-* .. .. .. | Claoxylon sp. | |
| *bó·rowa-* (*u*) .. .. | Myristica longifolia .. | (Hindi.) *Jaiphal.* (Burm.) *Zá·dipho.* |
| *bó·to-kó·ko-* (*v*) .. .. | Sabia (?) | |
| *búb-* .. .. .. | Ancistrocladus extensus(?) | |
| *bú·kura-* (*i*) .. .. | Diospyros (?) nigricans .. | Bastard ebony, or marble wood (superior variety). |
| *búr-* .. .. .. | | |
| *bú·tu-* .. .. .. | .. .. . . | Extensively used in the manufacture of arrows. |
| *chád-* (*a*) .. .. .. | .. .. .. .. | (Hindi.) *Baddm.* |
| *chá·dak-* .. .. .. | Rubiaceæ. | |
| *chág·e-* .. .. .. | Paratropia venulosa. | |
| *chai-* .. .. .. | .. .. .. .. | Bows made from this tree. |

[1] It has been chiefly owing to the kind assistance afforded by Dr. G. King, Superintendent of the Botanical Garden, Howrah (near Calcutta), that I have been able to ascertain the botanical names of so many of the trees in this list.

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| Andamanese name. | Botanical name. | Remarks. |
|---|---|---|
| *chaij-* (*a*) (*b*) .. .. | Semecarpus anacardium | (Hindi.) *Bildwa.* |
| *chà·kan-* (*b*) .. .. | Entada pursœtha. | |
| *chà·langa-* (*q*) .. .. | Pterocarpus dalbergioides | (Hindi.) *Sisu.* (Burm.) *Padauk.* |
| *chàm-* (*f*) .. .. | Areca laxa of Hamilton (a variety of Areca triandra). | |
| *chà·mti-* .. .. ... | Cynometra polyandra. | |
| *chàng·ta-* .. .. .. | Calamus sp. | Leaves used in thatching huts, and for making the warning wreaths round a grave or deserted encampment. |
| *chàp-* .. .. .. | Terminalia sp. | |
| *chà·to-* .. .. .. | Albizzia Lebbek (?) .. | (Hindi.) *Siris.* (Burm.) *Tsit.* |
| *chàu·ga-yù·anga-* .. .. | Hopea odorata .. .. | (Burm.) *Thingàm-byù-.* |
| *chè·nir-* .. .. .. | Lees sambucina. | |
| *chi·lib-* .. .. .. | Diospyros densiflora (?) | |
| *chò·ad-* .. .. .. | .. .. .. .. | (Burm.) *Màukaràung.* |
| *chò·bal-* .. .. | Atalantia sp. | |
| *chò·ngara-* (*a*) .. .. | | |
| *chò·pa-* (*a*) .. .. | Leguminosæ. | |
| *chòb-* (*a*) .. .. .. | Calamus sp. No. 2 .. | The fruit somewhat resembles a medlar in flavour. |
| *chò·kuga-* .. .. .. | Goniothalamus Griffithii. | |
| *chò·lij-* .. .. .. | Hypolytrum trinervium. | |
| *chòr-* (*i*) .. .. .. | Celtis cinnamomea. | |
| *dà·kar-tà·la-* .. .. | Hydnocarpus (?) .. | (Hindi.) ? *Lál chini.* (Burm.) ? *Chàndu.* |
| *dè·debla-* .. .. .. | Xanthophyllum glaucum. | |
| *dùd-l* .. .. .. | Myristica Irya .. .. | Sometimes used for paddle making. |
| *dù·gota-* (*a*) (*f*) .. .. | Mimusops Indica (or ? littoralis) | (Hindi.) *Mowa.* (Burm.) *Kapàli thit.* |
| *dù·mto-* (*p*) .. .. | Guettarda speciosa. | |
| *dù·mla-* .. .. .. | .. .. .. .. | (Burm.) *Fishùm.* |
| *dù·ra-* .. .. .. | Barringtonia racemosa. | |
| *elètà·la-* .. .. .. | | |
| *è·mej-* (*b*) .. .. .. | Terminalia bialata. | |
| *eng·ara-* (*a*) .. .. | .. .. .. .. | Wild plantain. |
| *è·repùd-tàt-* .. .. | Strychnos nux vomica. | |
| *gù·cho-* .. .. .. | | |
| *gad-* .. .. .. | Calophyllum spectabile. | |
| *gel·dim-* (*a*) .. . | Leguminosæ sp. | |
| *ger·eng-* (*s*) .. .. | Bombax malabaricum .. | (Hindi.) *Semhal.* (Burm.) *Didu.* |
| *gù·gma-* .. .. .. | Trigonostemon longifolius | Leaves used medicinally as a febrifuge. |
| *i·til-* (*b*) .. .. .. | Pandanus (?) | |
| *jil-* (*a*) .. .. .. | Gluta longipetiolata .. | (Burm.) *Thip-pyù.* |
| *jù·la-* .. .. .. | Rubiaceæ. | |
| *jung·ma-* (*a*) .. .. | Stephania hernandifolia. | |

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| Andamanese name. | Botanical name. | Remarks. |
|---|---|---|
| *ji·dga* .. .. .. | | |
| *jī·si-* (*a*) .. .. .. | Alpinia sp. .. .. | (*Vide* Part I "Medicine," para. 4, and Part III, "Food," para. 35.) |
| *jŏr-* .. .. .. | Odina Wodier .. .. | (Burm.) *Nubòdè.* |
| *jū·laij-* (*b*) .. .. | Dendrolobium umbellatum | |
| *jū·mu-* (*a*).. .. .. | ? Bruguiera gymnorhiza, *or* Rhizphora mucronata | (Burm.) *Byŭbo.* |
| *kā·daka-* .. .. .. | Ficus hispida. | |
| *kai-* (*a*) .. .. .. | Mangifera sylvatica .. | Wild mango. |
| *kai·ta-* (*a*) (*b* .. .. | Artocarpus chaplasha .. | (Hindi.) *Kathar.*<br>(Burm.) *Toung-peng.* |
| *kā.pa-* (*a*) (*b*) .. .. | Licuala (probably peltata) | |
| *kāred-* (*a*).. .. .. | ? Sterculia (*or* Sanadera Indica) | The fruit contains a nut which after being sucked is broken, when the *shell* is eaten and the *kernel* thrown away. |
| *kārega-* (*a*) .. .. | Diospyros sp. | |
| *kō·kan-* (*r*) .. | Pajanelia multijuga. | |
| *kŏa-* (*a*) .. .. .. | Diospyros sp. | |
| *kŏ·rtā·la-* .. .. .. | Griffithia longiflora. | |
| *kŭ·daga-* .. .. .. | One of the Rubiaceæ. | |
| *kŭ·ara-* .. .. .. | Dracontomelum sylvestre. | |
| *lē·che-* .. .. .. | Lactaria salubris .. | The fruit being large and round is often used as a moving target by being rolled along the ground or down a slope and shot at while in motion. |
| *lē·kera-* .. .. .. | Leguminosæ sp. | |
| *lō-gaj-* (*a*) .. .. | Angiopteris erecta. | |
| *lō·koma-* .. .. .. | | |
| *mā·chal-* .. .. .. | Atalantia sp. | |
| *maū·-* (*x*) .. .. .. | Sterculia (?) .. .. | (Burm.) *Àuk yezà.* |
| *máng-* (*a*) (*b*) (*l*).. .. | Pandanus Andamanensium. | (Hindi.) *Kĕora.* |
| *mŏ·nag-* .. .. .. | Mesua ferrea .. .. | (Hindi.) *Sál.*<br>(Burm.) *Gangua.* |
| *mŏt-* .. .. .. | Heritiera littoralis. | |
| *mŭ·turia-* (*a*) .. .. | Anacardiaceæ. | |
| *ngā·tya-* (*a*) .. .. | Bruguiera sp. | |
| *ñgē·bēr-* (*b*) .. .. | Crena Rumphii. | |
| *nyŭ·raimo-* .. .. | Ficus sp. No. 1. | |
| *ŏ·dag-* .. .. .. | Eugenia sp. | |
| *ŏ·dorma-* (*a*) .. .. | | |
| *ŏ·li-* (*a*) .. .. .. | Ficus (probably macrophylla). | |
| *ŏ·lma-* .. .. .. | .. .. .. .. | (Burm.) *Thisunâwe.* |
| *ŏ·ro-* .. .. .. | Chickrassia tabularis .. | (Burm.) *Ngā·zu.* |
| *ŏ·ropa-* (*a*) (*b*) (*i*) . | Baccaurea sapida .. | (Hindi.) *Khatta phal.*<br>(Burm.) *Kanazo.* |
| *ŏ·rta-tāt-* (*a*) (*g*) .. .. | Uvaria micrantha. | |
| *pā-* (*b*) .. .. .. | Semecarpus (?) .. .. | (Burm.) *Thikadoe.* |

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| Andamanese name. | Botanical name. | Remarks. |
|---|---|---|
| *paï'ma-* .. .. | Clausena (probably Wallichii). | |
| *paï'tla-(b)* .. .. | | |
| *páb-* .. .. .. | Lagerstrœmia regina (? hypoleuca) | (Burm.) *Pima.* |
| *pár-* .. .. .. | Leguminosæ sp. | |
| *pá'ra-* .. .. .. | | |
| *pá'rait-* .. .. .. | Gramineæ. | |
| *pá'tag-* .. .. .. | Meliosma simplicifolia .. | Leaves sometimes used as aprons by women (*cide dö'gota-*). The kernel of the seed is eaten. |
| *pè'dag-* .. .. .. | | |
| *pè'li-* (*a*) .. .. | Gnetum scandens. | |
| *pè'laing-* .. .. .. | Memecylon varians | |
| *pi'cha-* (*i*) .. .. .. | Diospyros sp. .. .. | Bastard ebony, or marble wood (inferior variety). |
| *pi'dga-* (*u*) .. .. | .. .. .. .. | Common cane. |
| *pi'lita-* .. .. .. | Gnetum edule .. .. | Fibre extensively used (*vide* Appendix B, item 65). |
| *pi'rij-* .. .. .. | Afzelia bijuga. | |
| *pi'ti-* .. .. .. | Derris scandens. | |
| *pó-* (*t*) .. .. .. | Bambusa Andamanica. | |
| *pór-* (*a*) .. .. .. | Korthalsia (or Calamosagus) scaphigera. | |
| *pö'rud-* .. .. .. | probably Schmeidelia glabra | (Burm.) *Kimberlin.* |
| *pú'a-* .. .. .. | Bambusa .. .. .. | Used for making the shaft of the turtlespear, and for poling canoes. |
| *pú'lain-* (*b*) .. .. | .. .. .. .. | (Burm.) *Ngú'zu* sp. No. 1. |
| *pú'lia-* (*b*) .. .. .. | Mucuna sp. | |
| *pú'lka-* .. .. .. | Memecylon (probably capitellatum). | |
| *pú'ta-* (*b*) .. .. .. | Nipa fruticans .. .. | Dhunny leaf palm. |
| *rá-* .. .. .. .. | Dendrobium secundum. | |
| *rái-* .. .. .. | Phœnix sp. .. .. | (Hindi.) *Kajūr.* |
| *rár-* .. .. .. | Eugenia (?) .. .. | (Hindi.) *Chandan.* (Burm.) *Tau-ngim.* |
| *rau-* .. .. .. | Ficus laccifera .. .. | (Hindi.) *Bargat.* (Burm.) *Ngiau.* |
| *rè'che-* .. .. .. | Eugenia sp. .. .. | (Burm.) *Mai ámbu.* |
| *reg lá'kà chàl-* .. .. | Polyalthia Jenkinsii. | |
| *ri'di-* .. .. .. | Bambusa (?) .. .. | Used for making the shafts of the *rá'tà-*, *ti'rlēd-*, and *tó'lböd-* arrows. |
| *rim-* (*s*) .. .. .. | Celtis (*or* Gironniera) .. | (Burm.) *Tingám.* |
| *rú'toia-* .. .. .. | Syzygium Jambolanum. | |
| *tá'lunga-tāt-* .. .. | Antitaxis calocarpa .. | (Burm.) *Gangua ngre.* |
| *tá'lapa-* .. .. .. | Terminalia trilata (?) .. | (Hindi.) *Chāglam.* (Burm.) ? *Ngú'zu* sp. No. 2, or *Kyè na hu.* |

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| Andamanese name. | Botanical name. | Remarks. |
|---|---|---|
| *tăn-.* .. .. .. | | |
| *tâ·par-.* .. .. .. | Erycibe coriacæ. | |
| *tâ·tib-* (*a*) (*i*) .. .. | Croton argyratus (Blyth) | (Burm.) *Châunn.* |
| *tĭ-* .. .. .. .. | | |
| *tô·kal-* .. .. .. | .. .. .. .. | (Burm.) *Kiâtalung.* |
| *tôl-..* .. .. .. | Amomum dealbatum (*or* sericeum). | |
| *tŭp-* .. .. .. | Barringtonia Asiatica. | |
| *tŭ·ta-* .. .. .. | .. .. .. .. | (Burm.) *Pyŭ.* |
| *ŭd-* (*b*) .. .. .. | Menispermaceæ. | |
| *ŭ·dala-* .. .. .. | Pandanus verus. | |
| *ŭj-* (*a*) .. .. .. | Tetranthera lanceæfolia .. | (*Vide* Appendix B, item 76.) |
| *ŭl-..* .. .. .. | Carapa obovata .. .. | (Burm.) *Penlĕong.* |
| *ŭ·tara-* .. .. .. | Maranta grandis (*or* Phrynium grande). | |
| *wain'ya-* .. .. .. | | |
| *wâ·nga-* .. .. .. | Pterospermum acerifolium. | |
| *wai·unga-* .. .. .. | .. .. .. . | (Hindi.) *Jungli saigon.* (Burm.) *Pânn.* |
| *wī·lima-* .. .. .. | Podocarpus polystachia.. | (Burm.) *Thit min.* |
| *yâ·rla-* .. .. .. | | |
| *yâlig·i-* .. .. .. | Rubiaceæ. | |
| *yĕ·re-r* .. .. .. | Sterculia sp. .. .. | |
| *yō·lba-* .. .. .. | Anodendron paniculatum. | |

*Additional Notes.*

(*a*) Fruit is eaten.
(*b*) Seed is eaten.
(*c*) Heart of the tree is eaten.
(*d*) Pulpy portion of spathe is eaten.
(*e*) Leaf stems used in manufacture of sleeping mats. Leaves used for thatching purposes.
(*f*) Leaves used by women as aprons (*ō·bunga-*); rotten logs used for fuel (see also "Superstitions," para. 8).
(*g*) Stem of this plant used for the frame and handle of the hand-net (*kŭd-*) (*vide* Appendix B, item 20).
(*h*) Leaves used for thatching, for screens (*vide* Appendix B, item 74), for bedding, for wrapping round corpse, for packing food for journey, &c., and prior to cooking.
(*i*) Rotten logs used for fuel.
(*j*) Used in manufacture of the foreshaft of the *râ·tà-*, *tī·rlĕ·d-*, *tô·lbŏ·d-*, and *châm-* arrows (*vide* Appendix B, items 2, 3, 4, 8), and sometimes also the skewer.
(*k*) Leaves used for thatching and for bedding.
(*l*) Leaves used in the manufacture of articles of personal attire (*vide* Appendix B, items 25 and 28).
(*m*) The middle portion of rotten logs used for torches.
(*n*) Rarely used for making canoes.
(*o*) Used for adzes, sometimes for foreshafts of arrows, and for making children's bows.
(*p*) Leaves used for flooring of huts.
(*q*) Buttress-like slab roots used for making the sounding-boards employed when dancing.

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(*r*) Used for making canoes.
(*s*) Resin used in manufacture of *kā·ngatá-bŭj-* (*vide* Appendix B, item 62).
(*t*) Used in making the *gōb-*, *kai-*, and sometimes the *tōg-* (*vide* Appendix B, items 82, 80, and 10)
(*u*) Generally used for making paddles, and the leaves for bedding.
(*v*) Used for making shaft of hog-spear.
(*w*) Used for making baskets, fastenings of adzes, turtle-spears, torches (*tō·ug-*), and of bundles; also for suspending buckets, for stitching cracks in canoes, and in thatching.
(*x*) Used for making canoes; the resin is employed in making torches.
(*y*) Used for making canoes, pails, and eating trays.

## APPENDIX M.

### LIST OF SHELLS AND SHELL FISH COMMONLY KNOWN TO THE ANDAMANESE.

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| Andamanese name. | Scientific name.[1] | Remarks. |
|---|---|---|
| *l·d· ·la-* (*x*) .. .. | Monodonta (? labeo). | |
| *kad· ·la-* (*a*) .. .. | Delphinula laciniata. | |
| *bo·.. .. .. .. | Pecten (?) Indica .. | Scallop. |
| *chā·pata-* (*b*) .. .. | Pteroceras chiragra .. | Scorpion shell. |
| *chāu ga lōt chū·kul-* .. | Murex tribulus. | |
| *chej-* (also *chō·la-*) .. | Pinna (? squamosa) .. | Bouquet-holder shell. |
| *chī·dō·* (*b*).. .. .. | Pinna (?) | |
| *cho·kot·* .. .. .. | ? Conus eburneus. | |
| *chō·rom-* (*a*) .. .. | Scolymus cornigerus. | |
| *chō·wai-* (*a*) .. .. | Tridacna crocea. | |
| *chū-* (*a*) .. .. .. | Murex (? palma-rosæ) .. | Rose-bud shell. |
| *ē·la-* .. .. .. | Perna ephippium. | |
| *gar·en-* .. .. .. | Dentalium octogonum. | |
| *gar·en-ō·la-* (*a*) .. .. | Turbo (?).. .. .. | Top-shell. |
| *ī·na-ō·la-* (*a*) .. .. | Nassa (? tœnia) .. .. | Dog-whelk. |
| *jār·awa ·la-* (*a*) .. | Purpura Persica. | |
| *jī·rka-ī-* .. .. .. | Cyrena (?) | |
| *jō·rol-* (*b*) .. .. .. | Cerithidea telescopium. | |
| *jū·ru-wai·la kà bang-* .. | Solen vagina .. .. | Razor-fish. |
| *kā·marŭj-* .. .. .. | Trochus (? obeliscus). | |
| *kā·rada-* .. .. .. | Arca granosa. | |
| *kō·nop-* (*a*) .. .. | Tridacna squamosa. | |
| *l·d·do-* .. .. .. | Turbo marmoratus .. | Is eaten by the *bal·awa-* tribe only. |
| *lī·ta-* (*a*) .. .. .. | Cassis glaucus .. .. | Helmet-shell. |
| *māl·o-* (*a*) .. .. | Venus (?) | |
| *mār·ed-* (*a*) .. .. | Venus meroë .. .. | Pattern-shot Venus. |
| *mār·eno-* (*a*) .. .. | Patella variabilis .. | Rock-limpet. |

[1] To the Rev. T. L. J. Warneford, formerly chaplain at the Andamans, I am indebted for the classical names of many of the shells in this list.

(*a*) denotes those that are cooked and eaten.

(*b*) denotes those that are cooked and eaten by *married* persons only.

3: Temple G-5 (1901) 1903 AZ2 Andamans AZ2



136 **Marine Fauna.**—The marine fauna of the Andamans is of unusual interest and the aquarium on Ross Island under construction should prove of great scientific value. On examination the marine life goes to show what other physiological facts have proved—the close connection of the Islands with both Burma and Sumatra and the distant alliance with the Indian Peninsula. The land fauna, in several particulars, shows that the Andamans are closely allied zoologically with their neighbours, Arakan and Burma.

**Economic Zoology.**—The economic zoology of the islands has been thus summarised by Major A. R. S. Anderson.

"The coral reefs and dead shells afford an immense field for obtaining a very fine quality of lime, which has for many years past been used in the Andamans in building operations. Sea cucumbers or trepang are collected, dried and exported to the Chinese market. Wax and honey are obtainable in fairly large quantities in the forests; the honey is, however, of rather poor quality. Cuttle bones in large numbers can easily be picked up all round the islands wherever there is a sloping shore. Ornamental shells can be obtained with great ease in the rocky pools, reefs and shallow waters. Edible oysters are very plentiful. Pearls and mother-of-pearl oysters are occasionally obtained, but no systematic search for these valuable products has ever been instituted. The edible turtle and tortoise-shell turtle are plentiful. The former are sparingly exported and the shell of the latter is collected and exported. Edible birds'-nests of the finest quality are found in many of the caves in both groups of Islands. They are exported to the Chinese market."

**Conchology.**—The existing sea shells have been extensively collected by local residents for many years past, but there does not appear to be anything specially distinctive about them, and the various species have been incorporated into the general standard works on conchology. The presence of *scalaria preciosa* and of *argonauta argo* is noteworthy. But the land shells are more distinctive in their nature, and seem to corroborate the evidence procurable from the flora and the fauna of the Islands. They have received a good deal of attention both from scientific expeditions and from local collectors. There was a well appointed expedition fitted out by the Danish Government in 1846, in the frigate *Galathea* in which the zoologist, Reinhardt, first paid much attention to the mollusca. The conclusion apparently to be drawn from such knowledge as has been accumulated is, on the high authority of Godwin-Austen, that there is a distinct and close relationship in the past shown with Burma and Arakan by many closely allied species, and equally marked is the paucity of forms having an alliance with Peninsular India. On the other hand, some species are common to these islands and to Sumatra and Java.

• 137 **Forests.**—A section of the general Forest Department of India has been established in the Andamans since 1883 and, in the neighbourhood of Port Blair, 156 square miles have been formally set apart for regular forest operations. The activity of the department is strictly limited by the amount of convict labour from time to time available, as there is no indigenous labour whatever. The annual value of forest produce used in the Settlement during the last seven years has averaged ₹1,13,683, and the annual value of exported timber has averaged for the same period ₹1,69,633. This last product is increasing rapidly in value.

313 137 **The Timber and its Economic Uses.**—The timber available for economic purposes is both plentiful and various. It is divided for commercial objects into three classes, known by their commercial names thus:—First class, Padouk, Koko, Chuglam, Marble-wood, Satin-wood; Second class, Pyimma, Bombway, Chai, Lakuch, Lalchini, Pongyet, Thitmin, Mowha, Khaya, Gangaw, Thingan; Third class, Didu, Ywegyi, Toungpeingyi and Gurjan. Padouk is the chief timber for export to Europe at a very high price per ton, but other first class timbers also find a market there. Third class timbers find a ready market in Calcutta, while the second class are extensively used locally.

The trees chiefly used as timber by the Andamanese for their own purposes are mangrove, padouk, *melochia velutina*, some of the sterculiaceæ, *bombax insigne*, *areca laxa*, pandanus, bamboo, *anadendron paniculatum*. They also gather and eat the fruit of a great variety of trees and use the leaves of the following for medicinal purposes:—*trigonostemon longifolius*, *alpinia* species. *Calamosagus laciniosus*.

Padouk (*pterocarpus dalbergioides*) can be used for buildings and boats, for furniture and fine joinery, and for all purposes to which teak, mahogany, hickory, oak, and ash are applied. It seasons quickly and easily, and is immune from the attacks of white ants and borers, except the marine worm (*teredo navalis*), and from rot of all kinds: colour, pale and dark red and brown. Koko (*albizzia lebbek*) is used for battens and furniture; colour, greenish grey, light brown and chocolate with dark markings. White Chuglam (*terminalia bialata*) and black Chuglam (*myristica irya*) are used for furniture, oars, shafts, and planking; colour, grey with darker markings. Marble or zebra wood (*diospyros kurzii*) makes furniture and joinery; colour, ebony with streaks of grey or light brown. Satin-wood (*murraya exotica*), which is not the satin-wood of Ceylon (*chloroxylon swietenia*), makes delicate furniture; colour, yellow. The proper names for the woods of the second class are as follows:—Pyimma, *lagerstræmia hypoleuca*: Bombway, *terminalia procera*: Chai, *alphonsea ventricosa*: Lakuch, *artocarpus lakoocha*: Lalchini, *calophyllum spectabile*: Ponyet, *calophyllum inophyllum*: Thitmin, *podocarpus neriifolia*: Mowha, *mimusops littoralis*: Khaya, *mimusops elenchi*: Gangaw, *messua ferrea*: Thingan, *hopea odorata*. These are used for a great variety of economic purposes locally connected with the building, ship and carriage making, furniture and joinery trades. Of the third class timbers, Didu (*bombax insigne*) is used for tea boxes and packing cases; Toungpeingyi (*artocarpus chaplasha*) for cases and planking; Ywegyi (*adenanthera pavonina*) for inferior cabinet furniture; Gurjan (*dipterocarpus turbinatus*) for slabs and planking and wood-paving. Lakuch and Ywegyi yield a yellow dye, Khaya the pagoda gum of Madras, Gurjan a resin and the well known oil.

The great mangrove swamps supply unlimited fire-wood of the best quality, and the bark of the trees a tan, as does also that of the bombway. The best mixture for steeping wooden shingles, is 3 lbs. of gurjan oil, 1 lb. of crude petroleum, 1 lb. of red ochre or metallic paint: the first and third ingredients are produced in the Andamans. Other minor products of the forests are several species of bamboo and cane and two thatching palms, *nipa fruticans* and *licuala peltata*. The cane roots are largely used in Calcutta for walking sticks: the majority of those sold by street vendors there from 4 annas to 8 annas each are from the Andamans. The inner bark of the *sterculia villosa* is used for making elephant harness for dragging timber, and the long climbing canes for ferry ropes and boat fenders. As regards general capabilities the Andaman forests, in addition to the invaluable and largely spread padouk, there is an extremely abundant supply of gurjan, gangaw (the Assam iron-wood) suitable for sleepers, and didu for tea boxes. Labour only is required to bring them on to the suitable markets. Safe anchorages are numerous and there is no difficulty in providing convenient points at which to ship the timber when extracted, especially as the localities of the valuable timbers are situate on, or near to, navigable creeks leading direct to the sea and thus rendering the forests capable of easy and economical working.

**Imported Flora.**—Both Kurz and Prain have written elaborately on the imported flora of the Andamans, and among the intentionally introduced plants and trees may be mentioned tea (*camellia theifera*), Liberian coffee (*coffea liberica*), Cocoa (*theobroma cacao*), Ceara rubber (*manihot glaziovii*) which has not done well, Manilla hemp (*musa textilis*), teak (*tectona grandis*), cocoa-nut (*cocos nucifera*), besides a number of shade and ornamental trees, fruit trees especially of the anti-scorbutic kinds, vegetables and garden plants. Among the shade trees, the most interesting is the flourishing rain-tree (*pithecolobium saman*) of the West Indies and American Continent, and among the vegetables the Otaheite potato (*dioscorea species.*). An attempt has also been made to introduce the Bahamas aloe (*agave sisalana*), but though it has flowered and given out bulbils in quantities, success is not yet assured. Tea is grown in considerable quantities and the cultivation is under a department of the Penal Settlement. The outturn for the last seven years has been on an average 2,519 chests per annum.

**General Character of the Forests.**—Generally the forests are filled with ever-green trees covered all over with climbers, but patches of deciduous forest

137 occur, sometimes over large tracts, conspicuous in the dry season when the leaves are off the trees. The huge buttressing of several species is a peculiar feature, and so is the growth of the forest in certain parts in belts, dependent apparently on the soil below: *e.g.*, the tracts of the bamboo (*bambusa schizostachyoides*) which almost exclusively occupy the indurated chloritic rock. Arborescent *euphorbias*, screw-pines (*pandanus odoratissimus*), and large cycads give on the coasts a remarkable appearance to the forests. Several palms are commonly seen, though the cocoanut is not indigenous. The general character of the forests is Burmese, with an admixture of Malay types. In the cleared places about Port Blair the grazing appears to be abundant, but is not really so, owing to the action of two destructive weeds: the needle bearing grass (*avena fatua*), which is pretty but not edible by any kind of food animal and being of a stronger growth than ordinary grazing grass supplants it wherever it is not rigourously kept down; and the sensitive plant (*mimosa pudica*), an imported nuisance, which rapidly covers all open and low lying places and is edible only by goats.

## IV. History.

175 **Ancient Notices of the Islands.**—The existence of the islands now known as the Andamans has, owing to the ancient course of trade, been reported from quite early times, though which of Ptolemy's island names ought properly to be attached to them may still be regarded as a moot point. Gerini, in his ingenious paper, *Notes on the Early Geography of Indo-China*, (*J. R. A. S.* 1897, p. 551ff) gives Bazakata for the Great Andaman, Khaline for the Little Andaman, Maniola for Car Nicobar, and Agathodaimonos for Great Nicobar. In the mediæval Latin editions of Ptolemy a remark somewhat as follows often appears opposite Bazakata:—"*cuius incolæ vocantur Aginatæ qui nudi semper degere feruntur, in hac conchæ sunt multæ.*" While it is on Maniola that the people are called *anthropophagi*. Even if one is inclined to accept this plausible theory, it is nevertheless, as will be seen from what follows, probable that Yule is right in his conjecture that Ptolemy's *Agathou daimonos oikos* preserves a misunderstanding, as perhaps does also the contemporary Aginatæ (with its later corruptions Allegate, Alegada on maps) for its inhabitants, of some sailors' term near to the modern Andaman. The old error that Ptolemy's maps were drawn by Agathodæmon, the grammarian of the 5th Century, A.D., is repeated in Portman's *History of our Relations with the Andamanese*, 1899, p. 50 and elsewhere.

Little Andaman, as a name, has a curious and obscure history on the old maps. In some of them we find Isle d'Andemaon (and Andaman) and also Isle de Maon (and Man), as if "Andaman" was the Great Andaman and "Man" the Little Andaman. Then in maps we have Chitre Andaman 1595, 1642: Chique Andemaon 1710: Cite Andemaon 1720, 1720 and Crita I. 1720 obviously corrupted out of Chitre, Chique and Cite. I have seen also Cite d'Andaman responsible for a town or city in the Andamans! And it is just possible that Chique Andemaon is responsible for the modern Cinque Islands between Great and Little Andaman, which are not five but obviously two islands. Chetty Andaman survived till 1858. Little Andaman, in its modern form, does not appear till the maps of Blair in 1790 odd.

175 101 **Origin of the name.**—The Chinese and Japanese knew the Islands respectively as Yeng-t'o-mang and Andaban in the first millenium A.D. (*vide* Takakasu's Edition of I-tsing pp. xxx and xxviii ff) which clearly represent the Andaman of the *Arab Relations* of 851 A.D. Then comes Marco Polo with his Arabic dual form Angamanain in 1292. After which we have Nicolo Conti in 1430 with Andemania, and after him almost every eastern traveller and mapmaker with some form of "Andaman." All these terms seem obviously to be based on the Malay name for the islands, as the Malays of the Peninsula have, for many centuries, used the islands for their piratical practices and for a trade in Andamanese slaves to their own country and Siam (this up to about 1860) and have known them by the term Handuman, which most likely preserves the very ancient Hanuman (monkey, *scil.*, savage aboriginal antagonist of the Aryans) so well-known to the Indian Epics and carried down to the Malays in story and translations.

6: Cipriani E-5 (1951-1953)1961 AZ2 Andamans AZ2
Onge



ing edible matter; furthermore, they don't care to take the trouble as food is generally plentiful. We must also realize that they find salt repulsive. Even honey – so easily kept for many months – is disposed of, if possible, on the very same day it is collected. Incredible quantities of this or other food may be consumed for days and nights on end until everything disappears. Very few of the islanders care to vary their meat diet with an occasional diet of vegetables in order to disintoxicate the system; yet nourishing yams and other roots grow wild and plentiful. They are so rich in carbohydrates that I preferred them to potatoes and rice. I may add that the Onge, on my request, brought me yams and roots that they were glad to barter with rice, tea and sugar – soon declared by their wise men to possess medicinal properties.

The Onge's stomach, intestines and general physiological equilibrium suffer from lack of salt and such bad nutritional habits as those described. They damage the human body, together with unrestrained sexual activity.

One highly unhygienic custom of the Onge is the use, all over Little Andaman, of peculiar sucking-sticks. These pass from mouth to mouth during the frequent meat or honey orgies indulged in by the natives.

When boiling pork or turtle, a quantity of liquid fat floats on the surface of the broth. Though the Onge despise the broth, they don't like to waste the fat. So they devised an efficient solution: they suck the fat up by means of a wad of absorbent matter obtained by chewing the end of a fibrous stick selected among many species of trees in the forest. The end of the stick is chewed along a section of 5 cms, the remaining part – about 25 cms long and 2 cms thick – is used as a handle to prevent the fingers from burning.

In every Onge camp sucking-sticks are permanently in evidence owing to the inmates' frequent ingestion of liquid fat or honey. A second version of the sucking-stick consists in a narrow, cotton-like strip, up to 80 cms long, with only a small part of the original wood remaining. This serves as a handle for dipping the stick into a wooden barrel full of honey. In both instances the same tool passes for hours from mouth to mouth: from older people to greedy children, anxious to suck the coveted delicacy off the stick that has been dipped into the pot. The rapid spreading of epidemics, which often occur in the Andamans, is certainly encouraged by the use of these sucking-sticks. I found no reference to this practice in books on the Andaman Islands.

Everything they eat, particularly meat, the Onge consider as either remedial or harmful. They are therefore chary of accepting proffered food if it is unknown to them. When I brought 30 Onge to Port Blair to introduce them to Dr. RAJENDRA PRASAD, President of the Indian Republic, they were troublesome about food. In Port Blair it was not as easy as in Little Andaman to procure whole pigs; sometimes only pieces were available. The Andamanese Forest Department was quickly informed of the difficulty and kindly supplied the desired animals. In moments of shortage I tried to give the Onge cooked lamb, goat, chicken and pigeons; they resolutely refused them as unhealthy. Birds are never eaten by the Onge, who consider them shelters for human souls

6: Cipriani E-5 (1951-1953)1961 AZ2-Andamans AZ2
Onge



common in the Andamans, said by RADCLIFFE-BROWN (p. 273) to be eaten by the Andaman Islanders as a protection against rheumatism, is never killed. For some superstitious reason the Onge are simply horrified at the thought of touching such an enormous flying bat. Among the fruits, those of a plant whose wood has such a revolting smell that it is known, in English, as "stool-tree", are believed to have exceptional protective properties for the human body. The fruits themselves smell even worse than the wood, but this, to the Onge, makes them appetizing rather than disgusting. Concerning honey, and the many sugary fruits of the jungle that are available all the year round, the Onge luckily ignore the simple method of distilling alcohol. No intoxicating drink reaches Little Andaman from the outer world, whereas in Great Andaman alcohol, together with imported syphilis, was one of the main causes of depopulation. No syphilis appears as yet to have reached Little Andaman. This is also confirmed by the research carried out by Dr. HERMANN LEHMANN of London's St. Bartholomew's Hospital, during February 1953 in my Onge camp in Labanare (north-east coast of Little Andaman).

## II. Effects on the People's Lives

The islanders die young, specially the men. The majority of them succumb before reaching the age of 20; most of the survivors die between 20 and 40; the rest – with a very few exceptions – before 50. Women, after marriage, follow a similar pattern: the death rate among women, however, is slightly different owing to a less corrosive sexual life. Some women may live to the age of sixty, but both sexes age soon, appearing older than their years when still in their twenties. The short Onge span of life recalls conditions which apparently prevailed among prehistoric and protohistoric men. Palaeolithic man died at an earlier age than modern man. The Onge today, in many respects, behaves as palaeolithic man behaved countless centuries ago. – Infant mortality is high; the first five days of life are the most critical for the Onge, owing, in part, to the hard life led by mothers even during pregnancy, which often causes functional damage to the placenta. Delivery is generally easy and traumatic injury rarely occurs; but premature births are common, and so are malformations and other anomalies. Imperfect infants are quickly eliminated by their parents. As a result, only a small number of children are allowed to grow up, but these appear normal. There are no blind and no deaf-and-dumb people in Little Andaman. I saw only two instances of incipient lameness: in an unmarried boy of about twenty and in a young married woman. Only robust infants can survive.

The Onge, so careful about their food, are completely indifferent to something else that is considered very harmful in continental and insular regions close to the Andamans. There, menstruating women are often segregated and considered harmful to the entire community. Not so in Little Andaman, where the remedies applied in the circumstance are extremely primitive (cf. supra) and could probably be traced to palaeolithic man. I saw nothing

10: Sen K-3, 4 (ca. 1955) 1962 AZ2 Andamans AZ2

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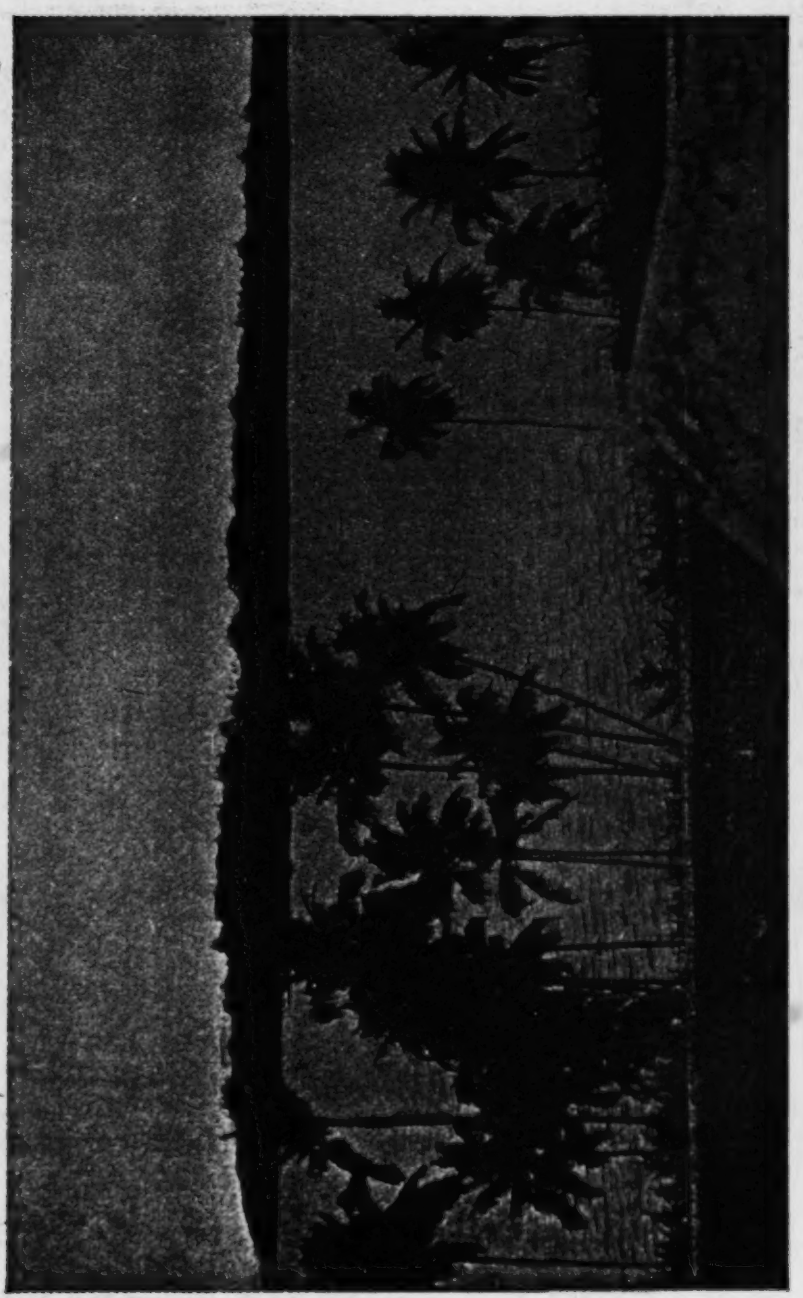

A Panoramic view of an island of the Andamans.

10: Sen K-3, 4 (ca. 1955) 1962 AZ2 Andamans AZ2



Hence the formation of the coral reefs and raised beaches can be accounted for only if we believe in the recent upheaval of the Andaman-Nicobar ridge. Let us see the evidences that are in favour of this upheaval and those against it. Swell and Tipper believe that the Andaman-Nicobar ridge has experienced an apparent elevation of land which is only possible through the eustatic change of water-level. They have put forward a number of arguments that are as follows:

(1) The formation of coral reefs is possible only if there be an apparent or true elevation of the land.

(2) Throughout the tropical belt there are evidences of an apparent elevation of land in comparatively recent times.

(3) At the South West corner of Rutland Island in the Andaman Group, there is a raised pebble beach, situated 5'-6" above the top-level.

(4) At the southwest end of the westermost of the Twin Islands, off the west side of the Rutland Island, is a raised beach of shingle-conglomerates, about 6' ft. above high water-mark. This apparent upheaval of the land i.e. fall of the sea-level is believed to have been caused by the climatic fluctuations in the Quaternary period causing glacial and interglacial periods which resulted in a fall and rise of the water-level respectively.

But Kurz (1868) does not believe in the recent upheaval of the Andamans, but he holds the opposite view. The advocacy of Kurz in favour of the sinking of the Andamans is also due to a number of reasons.

Kurz had his conclusion from the botanical aspect of the coastal region. Kurz says, "some of the stumps of the trees (along the shore) proved to belong to such species as never grew in the mangrove swamps, and in any locality such as that in which they are now standing. They appeared to me to belong to *Pongamia, Erythrina, Thesperia* and even to *Manusops Indica,* accompanied by strongly buttressed trunks. Also trunks of *Bruguiera-gymnarhiza* are frequent and of a larger size than those which grow close to the shores but apparently agreeing with those which are everywhere found further up the creeks. All these (except the last mentioned) are trees which never occur in the mangrove swamps, but in the sandy soil just behind them or else bordering the sea where the shores are very steep and not adapted to the formation of mangrove swamps."[1] This evidently leads one to believe that the

1. Kurz. S—On the vegetation of the Andaman Islands, Calcutta.

10:Sen K-3, 4 (ca. 1955) 1962 AZ2 Andamans AZ2



133 [137] Andamans are sinking so that the trees which are found in the sandy soils behind the mangrove swampo are seen to be amidst them.

The sinking state of the Andamans has been further shown by quoting the reports of the Andaman Committee (1858)[2]. It is stated that the sea had encroached upon some 40′ or 50′ feet since the first settlement at Chatham Island in Port Cornwallis so that the store house that stood up there has been destroyed by the sea since the abandonment of the place since 1796. Again the Hamfray's strait changed a good deal in a very short margin of time. The easiness with which Helfer[3] in 1858 sailed through the strait became unnavigable later on except for small boats, as pointed out by the Andaman Committee. These facts not only prove the sinking state of the islands but also the rapidity with which the sinking is taking place. But the view has been strongly disputed by Tipper and Swell. Swell believes that whatever evidence that is found in favour of sinking is completely due to local change of level and Tipper argues that the coastal regions have slipped downwards to the sea giving rise to the evidences of sinking. He says that the structure of the Andamans may allow such slips into the sea.

Thus the enigma of the problem remains unsolved. Even in recent years the Ross Island off the Port Blair coast has been found to sink down into the sea. We have to scrutinize that this sinking which is evidenced in many parts of the Andamans is whether due to a new phase of sinking after the cessation of the upheaval of the islands which created the coral reefs, raised beaches etc. or due to the slip of the coastal region into the sea.

The direct connection of the Andaman and Nicobar islands with the mainland is still a controversial matter. But it is held by Mr. Kurz that the Andamans were connected with the mainlands which he concluded largely from his observations of the botanical aspect of the islands. In describing the flora of the Andamans he remarks "one may presume that a great number of species which originally grew in countries now submerged between these islands, Burmah and Hindoostan, have been repelled by the advancing sea and vegetation has thus become comparatively richer in generic types as the area grew smaller." Swell argues if at all any land connection of the islands with the mainland would have occurred, it would have surely been broken before the evolution of

[113] 2. Bonington, M.C.C.—The Andaman and Nicobar Islands, Census of India, 1931.

3. Helfer, a Russian geologist, while prospecting the islands in search of gold was killed by the aborigines.

10: Sen K-3, 4 (ca. 1955) 1962 AZ2 Andamans AZ2



of rainfall because it comes first under the impact of the southwest monsoon. As the old observatories at Port Blair and Nancowrie are located on the leeward side it is probable that at stations on the windward side in these areas the rainfall is heavier (probably more than 140"). This greater amount of rainfall helps the development of a denser tropical vegetation in the western coast.

The southwest monsoon burst over the South Andaman by about 20th May (15th June at Calcutta) accompanied by thunder and rain. In May the number of rainy days is 16, in June 21, in July 26 and in August almost on all days. But the amount of rainfall is not maximum in August (16.29") which is so in the month of June.

The two periods of maximum precipitation are

(a) May and June, and

(b) September and October.

which correspond to the beginning and the end of the southwest monsoon.

The rainfall of the northeast monsoon begins from the month of October.

January and February are almost rainless months in the northern stations. Port Blair experiences rainfall almost throughout the whole year but the fluctuations of seasonal rainfall are quite large (1.11" in February and 21.75" in June). The highest annual rainfall recorded during the last 60 years is 150" and the lowest is 84".

TABLE IV

*Rainfall in inches*

| | J | F | M | A | M | J | J | A | S | O | N | D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Port Blair | 1·79 | 1·11 | 1·12 | 2·36 | 15·13 | 21·75 | 15·43 | 16·29 | 17·40 | 12·51 | 10·52 | 7·92 |
| Long Island | 0 | 0 | 0·11 | 0·48 | 9·65 | 6·62 | 10·62 | 10·68 | 10·30 | 6·00 | 0·87 | 0·62 |
| Mayabunder | 0 | 0 | 0·19 | 1·20 | 12·10 | 8·38 | 15·43 | 9·94 | 10·00 | 8·81 | 2·03 | 0·92 |

Table Island—Data not available.

*Humidity*

It is high throughout the year being highest during the southwest monsoon when the average is as much as 90% and on individual days the atmosphere may be saturated. The lowest humidity occurs during December to February when it varies from 72 to 75%. The annual variation is about 15%. The humidity in the south is more than in the north.

10: Sen K-3, 4 (ca. 1955) 1962 AZ2 Andamans AZ2



## CHAPTER V

## NATURAL VEGETATION

137 "The Andamans present much variety in soil formation and there is accordingly a corresponding diversity of the vegetation."[1] The whole of the islands has an almost unbroken tropical type of forest. Unlike most of the countries, the islands have not been cleared of forests and still they occupy almost the whole of the islands except some areas around Port Blair in the South Andaman and a few other scattered spots. But the programme of settlement of the refugees from East Bengal and of some people from South India needs the clearance of forests[2] for providing rooms for settlement and the optimum amount that should be cleared for maintaining a perfect regional balance of the country is a highly controversial issue.

The general boatanical aspect of the islands is a deep cover of forests throughout the whole of the islands, the average height of the trees being 100' ft. with straight stems and being covered in places entirely by creepers which hang from the top of the trees like festoons. Amongst these lianes the *Dinochala Tjangkorreh, Entada Purshaela. Calamus and Dischidia nimmulia* have been recognised. There is an intense undergrowth of luxuriant plants making the forests impenetrable. It is observed by Mr. Kurz that the straight growth of the trees disappears, however, south of the South Corbyn's Cove and along the western coasts a more stunted vegetation occurs, the mean height of the vegetation being 80' ft. Along the last named region, the trunk of the trees are bent showing some tendency of those trees to be in conformity with the direction of the southwest monsoon.

### TYPES OF FORESTS

Depending upon the nature of topography, the soil and the availability of water, 3 main types of forests have developed in the Andaman Islands. They are

(a) The Evergreen Forest,
(b) The Deciduous Forest, and
(c) The Mangrove Forest.

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1. Kurz, S—Report on the vegetation of the Andaman Islands.
2. The clearance of forest is continuing for settlement in the islands.

10: Sen K-3, 4 (ca. 1955) 1962 AZ2 Andamans AZ2



The Evergreen forests are obviously concentrated in the regions of perennial water supply of water and therefore, are found in the moist valleys of the fresh water streams and also on the high hills as they experience relatively greater amount of rainfall. The principal trees are various species of Garjan (Dipterocarpus) associated with Black Chuglam (myristica irya), Lalchini (Calophyllum spectabile), Toungpeing (Artocarpus Chaplasha) etc. besides a number of minor species.

The Deciduous forests exist primarily on the lower and more gentle slopes of the hills. Padauk (Pterocarpus dalbergioides) forms the principal tree associated with Canarium euphyllum, Papita (Sterculia campanulata), Koko (Albizzia lebbek), Didu (Bombax Chaplasha), Pyimma (Lagerstreamia hypoleuca), White chuglam (terminalia bialata). Besides these few important species, a host of other types of trees are found in the islands but they are not so important from the point of view of revenue.

The Mangrove forests are widespread almost all along the coasts and especially along the estuaries of many creeks in a belt varying from a few yards to over a mile in width. As the creeks penetrate deep into the islands, the mangrove forests are also found to do so. The species of importance are Bruguiera gymnorhiza, Rhizophers Conjugata and Mucronata. The first one of them is of supreme importance which grow in pure stands. It attains a height of 70 to 80 feet and a girth of 5 feet.

*Economic Value of the Forests of the Andamans.*

The forest resources hold a key position in the list of the resources of the islands. The tropical vegetation inspite of its luxuriance, is generally much inferior to the temperate forests from the economic point of view. The absence of the growth of the different species in pure stands, the non-availability of the dense tropical vegetation, a sultry climate being incongenial for the tiresome and strainous labour required for lumbering operations and the great distance of the forest areas from the areas of consumption are the factors which have decisively proved the inferiority of the tropical forests. In many parts of the tropics, the forests being accessible and having good communication facilities, have paved the path for the development of the lumbering industry. Only because of these advantages the forests of the Caribbean Islands, Puerto Rico etc. have been virtually exhausted and many of the southeast Asian countries have started it at a very rapid pace.

The forests of the Andamans, in spite of their luxuriance, donot have very many valuable species though a few of them are useful for a large

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number of purposes. The important species are padauk (Pterocarpus dalbergioides), garjan (Dipterocarpus spp), white dhup (Canarium euphyllum), papita (Sterculia campanulata) and the other ones of lesser importance are koko, white chuglam, lakuch, thingan, ywegi, lal bambwn, etc. A classification of the species according to their economic value and uses has been attempted below.

Class I type — Padauk, Koko, Chuglam, Marble wood and Satin wood.

Class II type — Pyimma, Bambwn, Chai Lakuch, Lakuch, Lalchini, Pongyet, Thitmin, Mowha, Khaya, Gangaw, Thingau.

Class III type—Didu, Ywegyi, Toungpeingyi and Garjan.

*Of the class I woods*, the padauk is of the most superior quality. Its average weight is 48 lbs. per cubic foot. It is a deep red wood, often with darker streaks, moderately hard and durable and seasons well and takes a fine polish. Some trees produce pale coloured wood, known in the trade as 'off colour' padauk which though good for construction purposes is of less value than the red padauk for ornamental use. Padauk is generally used for building boats, furniture, fine joinery and for all purposes to which teak,mahagany, hickory, oak and ash are applied. It is immuned from the attacks of white ants and borers, except the marine worm (toredo navalis) and form rats of all kinds.

The kako is of the colour of greenish grey or light brown or chocolate with dark markings with an average dry weight between 45-50 lbs. per cubic ft. It is not so hard and lustrous like padauk and as such is used in battons and furniture making.

The white and the black chuglams are of grey colour with darker markings. They are generally used for furniture, shafts and planking.

The marble or zebra wood is ebony with streaks of grey or light brown. It is used generally for furniture joinery makings.

The stain wood[1] is genearlly yellow in colour and it is soft and light. It is used for the manufacture of delicate furniture.

The Class II woods are used for a great variety of purposes. The pyimma is of considerable importance in the export list of the trees. The average dry weight is about 40 lbs. per cubic foot and is pale in colour, hard, durable and seasons well but swells when wet. It is largely used for building purposes specially as beams of the roof.

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These informations were collected from the Forest Department, Andamans.

1. It is confused by many with the Sation Wood of Ceylon.

10: Sen K-3, 4 (ca. 1955) 1962 AZ2 Andamans AZ2



The bombwn is the second most important type in the Class II type of woods. It has an averge weight of 40 lbs. per cubic ft. and is generally yellowish grey in colour with darker streaks. The durability of the wood is quite long but it cannot stand exposures. It is generally used for making of furniture and joineries.

The rest of the woods have also got an widespread application in a variety of purposes e.g. house building, shipmaking, carriage and furniture making. But the amount exploited from the forests is not of significance.

The didu and garjan are the most important in the class III type of woods. The former is of readdishy greay or yellowish in colour and is very soft and light. As such it is widely used in the making of packing cases for tea specially. The garjan is of the greatest demand of the Andaman forest woods. It has an average weight of 45-56 lbs. per cubic foot and is moderately hard. It is reddish grey to reddish brown in colour and is of moderate duration and as such the wood cannot be used for railway sleepers unless treated. It is used for planking and wood-paving now-a-days.

Ywegyi, being not a durable and hard type of wood, is generally used for the making of inferior cabinets. The trees yield a yellow dye which is also of wide use.

Besides these, there are a host of other forest woods such as the several species of bamboo, cane, thatching palms etc. (For the industries based on forest products, see the Chapter on Industry.)

*Forest Working.*

The exploitation of timber from the forest has been attempted since the formation of the penal colony in the islands. For the systematic working of the forest, a Forest Department was opened in the year 1883 and a saw mill at Chatham was established in 1915 with a monthly outturn of 100 tons. But this was closed and another saw mill was set up by the Burma Trading Company having a monthly output of 750 tons and a second mill, an American circular mill in Chatham in 1927 and another mill in the North Andaman in 1925. But fortunately the wanton destruction of the forests was not possible because of the limited convict labour, and the fear of working in the aborigine-infested areas. The elephants were proved to be uneconomical in the exploitation of forest and an attempt for replacing the elephants by skidder was made in 1930. But the latter one was found to be uneconomical compared to the elephant power and this resulted again in the engagement of elephant

11: Cipriani E-3 (1951-1955) 1966 AZ2 Andamans AZ2
Arioto
Jarawas



has a moustache, whereas pure Negritos have no body or facial hair.

## THE JARAWAS

For obvious reasons I was unable to carry out any studies on the Jarawas. Apart from a restricted area around Port Blair, on the east coast of Great Andaman, the whole island is a tangle of tropical vegetation, in many places impenetrable, or at most passable only by hacking a way through. A few roads radiate from Port Blair, but none penetrate more than twenty kilometres or so from the township. To the north of the town is a well-maintained police cordon that stretches right across the island from east to west to prevent infiltration by the Jarawas; those in the south were all rounded up some time ago. Only beyond the cordon do the Jarawas maintain their rule over the virgin forest almost unchallenged. Like all the Andamanese they are Negritos, small in stature and extremely dark skinned. Obsessed by a fierce hatred for anyone outside their own group, enemies even of the other Andamanese, they roam through the forest with their deadly arrows. Shot from their powerful bows, their dagger-sharp arrows penetrate deep into the body of the victim – they can transfix a man's chest. The bloody skirmishing which has gone on for the last hundred years shows no signs of lessening even today.

The Jarawa ferocity increased as the result of grave mishandling of the situation by the foreigners. In this connection the following sentences from Portman's *History* may be quoted: 'On our arrival the Jarawas were quiet and inoffensive towards us, nor did they ever disturb us, until we took to continuously molesting them by inciting the coastal Andamanese against them. After a few years of this disturbance, the life of the Jarawas became very hard and in retaliation they began to attack us.' As the author in part recognizes, 'It was our fault if the Jarawas became hostile'. This was a fundamental error. Petty pilfering committed in perfect innocence by the Jarawas, ignorant of Western ideas of individual property, led to vicious punitive expeditions. To this end fire-arms were given to the hereditary enemies of the Jarawas, the Arioto. Elated by their unexpected power, they at once began slaughtering any Jarawa within sight, and enjoyed themselves hugely.

11: Cipriani E-3 (1951-1955) 1966 AZ2 Andamans AZ2
Onges



142 147 482 much assistance in this respect, as the muscular insertions are exaggerated in both sexes, both being subjected to continued physical effort resulting in muscular bulk.

142 147 164 [304] [515] One quite outstanding physical feature in the Onges is their teeth. The palate is unusually arched, unlike that of the African pygmies or the Bushmen. The teeth, which are never filed or cut, as many primitive peoples do for decorative purposes, are very white; caries is rare, and although never cleaned the teeth are retained till late in life. A common abnormality is that the lateral incisors are as pointed as the canines. This, with the whiteness of the teeth and eyes against the blackness of the skin, gives the Onges a sinister appearance, which may account for the old description of the Andamanese as men with ferocious dogs' heads. The only (summary) cleaning the Onge teeth receive is the use of toothpicks, thinner and rather longer than the European variety and made from the tough, flexible bark of a certain reed. After use, they are carefully thrust into the hair for future occasions. Every Onge has one or more threaded through the hair on top of the head.

142 147 [264] [514] The strength of the Onge teeth enables their owners to champ their way through what are for us inconceivable quantities of food, both animal and vegetable, which is chewed slowly and determinedly, dust, earth, sand and all, and then swallowed without apparent ill effects, other than the flatulence arising from overconsumption of animal matter. But the Onges use their teeth for other purposes besides eating. In time the teeth become worn down by the inevitable grinding of dirt and grit, but this does not prevent the Onges from continuing to chew the bark of trees and cords, which is a lifelong occupation. This duty falls mainly on the women, and I have seen aged women, their teeth worn almost to the gums, doggedly chewing bark as their contribution to the communal life of the group. The strength of the teeth is unbelievable – I have seen children of ten to fifteen years crush nails up to two millimetres thick, and dent lumps of iron.

114 123 142 147 [37] I myself once had good cause to be grateful for their power. My party and I found ourselves stranded in the forest on South Brother without guns or even knives, and without cooking utensils. There were large clutches of turtle eggs buried in the sand nearby and my two Onge companions pointed out a coconut tree loaded with nuts (which turned out to be the only one on the islands, seeded

11: Cipriani E-3 (1951-1955) 1966 AZ2 Andamans AZ2
Onges



from a nut carried by the sea from some tree hundreds of miles away). There was thus ample food for several days, if only the coconuts could be opened. The Onges' teeth solved the problem. They attacked the nuts close to the stalk, stripping off great chunks of the fibrous outer covering until they had uncovered the three 'eyes'. These they dug out with a sharp piece of stick, so that we were able to drink the juice and then break up the nuts to get at the flesh. Never did coconuts taste so good!

Round the base of the tree I saw a thick layer of broken pieces of coconut, the remains of nuts opened by the Onges' teeth over the years. The strength of their bite resembles that of the African pygmies, whom I have seen hanging by their teeth from the lianas and who can dent the barrel of a gun.

The average life span of the Onges, and indeed of the Andamanese in general, is fairly short. On Little Andaman there are probably no individuals over the age of sixty, and most die before fifty. Here again they differ from African peoples of similar stature; Bushmen have been known to live to a hundred, and I saw one in Natal, incredibly wrinkled, but not shrunken, who was certainly near that age if not, as he claimed, over it. This is quite unknown in the Andamanese. There are none with white hair; although a few white hairs can sometimes be found on the head of an old woman, there are none to be seen in the men, who die younger than the women. There is no baldness, which is by no means rare in Negroes, particularly in southern Africa.

Precise age is not easy to determine in the Onges. Visual assessment is hampered by the absence of the signs of ageing common in Europeans. Moreover, a particularly child-like expression often lasts into adult life. In May 1952 I saw on Car Nicobar two Jarawa youths, small but robust, whose age by our standards one would have estimated at ten or twelve years. One turned out to be fourteen, however, and the other at least two years older, and both were adolescent, despite their childish appearance.

Males appear to reach their maximum height at about eighteen, and females at about sixteen; both sexes reach full maturity at about twenty-three. At forty-five they are old: their hard life, their unbalanced diet, with its enormous quantities of fat meat eaten in excess, and complete absence of salt, and their unrestrained sexual activity, may all be contributing factors. The slightly greater age

11: Cipriani E-3 (1951-1955) 1966 AZ2 Andamans AZ2



sea itself, but to the rising and falling of the land with the recurring movements. Even between 1951 and 1952 there was a noticeable alteration in the level of the north-east coast of Little Andaman, following an earthquake in July 1951; the Onges had to move the communal hut at Tambe-e-buiè further inland, because the sea, previously twenty metres away, had begun to come right up to the hut. In several places giant trees centuries old crashed to the ground, their roots left without any foothold as the level of the land fell suddenly all along the coast. If this can happen in one year, it is hardly surprising that what now appears as an archipelago is in reality a continuous mountain chain, its levels broken and rebroken over thousands of years till the islands became separated by the sea for good, their coasts so eroded that subsequent quakes have failed to reunite them.

It is highly unwise even to attempt a landing on Little Andaman during the monsoons. Both the north-east monsoon in June and August and the south-west in November and January whip the seas up into a frenzy, but in late April and again in late September the sea is quite calm. Since both monsoons pass over vast tracts of sea, they become saturated with water vapour and bring torrential rains, not infrequently accompanied by hurricanes violent enough to strip all the leaves off the trees. After these storms the jungle, normally almost impenetrable, is made even more so by the tangle of fallen branches and the trunks of old trees torn up by the wind or the lightning. The lightning strikes the tallest trees, which may smoulder for days on end without setting fire to the sodden forest, so great is the humidity. I have often seen one of these flaming torches; the Onges, ignorant as they are of the art of making fire, take advantage of the phenomenon, as a continuous supply of burning wood is a necessity in a climate which is so damp and humid all the year round that matches become useless after twenty-four hours unless suitable precautions are taken.

Once on the island, virgin forest stretches endlessly before one in undulating waves of treetops, black and terrifying. From the tops of the trees thousands of lianas hang everywhere, winding like snakes from trunk to trunk, forming an inextricable tangle, yet somehow always elegant, binding the entire forest into one dense mass. Many of the tree-trunks reach diameters unheard of in temperate climates. Some of them have hollow cavities, treasured by the Onges as hiding-places or temporary shelters.

11: Cipriani E-3 (1951-1955) 1966 AZ2 Andamans AZ2



the Onges as hiding-places or temporary shelters. In these cavities, which remain full of water right through the dry season, flourish a horde of amphibia, many hitherto unknown.

The great trees are sometimes so close together that it is literally impossible to pass between them, yet it is rare to find two of the same species next to each other, so great is the variety. Huge clumps of ferns are everywhere, hiding the roots of dying trees, hundreds of years old, and fallen trunks rotting on the ground. Some of the thicker and taller trees protect themselves from the monsoon gales by developing buttresses, usually four or six to a tree, which stand out from the trunk like right-angled triangles, with the apex about ten metres from the ground. If a blanket is stretched between the sloping sides of two of the buttresses one can improvise a shelter which is extremely comfortable by local standards, and both man and animals take advantage of this natural cover; I myself took shelter like this on many occasions. (They need to be treated with caution, however, as the local snakes have a predilection for siestas in the darkest corners.) If a hard piece of wood is struck against one of the buttresses it echoes hollowly, and the Andamanese often make use of them to transmit warning messages over considerable distances, using a form of code. A few beats can make every inhabitant within a wide radius vanish from sight, hastily making for the nearest hiding-place. It is hopeless to try and ferret them out once they have been warned, and there is always a risk of being killed by one of their arrows in the process.

Sometimes the Onges used to disappear suddenly for fun. The blackness of their skin is a great help in this, since even on the brightest afternoon it is intensified by the obscurity of the forest. One has a disturbing sensation of being entirely alone, yet knowing that dozens of pairs of eyes are watching as the Onges glide silently from trunk to trunk between the buttresses.

The whole island is a mass of knotted vegetation, and it is useless to attempt to cut any form of lasting path, as the plants immediately grow back. 'Walking' in the Andamans therefore means opening up a way with a hatchet, unless one adopts the rapid but exhausting Onge method of swinging over obstacles by the lianas. This is the kingdom of the epiphytes. The lianas cover their hosts as if determined to hide them, and clumps of orchids hang from nearly every trunk, although their flowers are unfortunately very small.

11: Cipriani E-3 (1951-1955) 1966 AZ2 Andamans AZ2



It is impossible to imagine a more varied or richer sight than the Andamanese forests at any time of year. The colours, and the light effects, particularly at dawn and at sunset, the myriads of flowers of every hue and scent, every shape and size, the strange noises, all combine to produce an effect which stuns the outsider. The spectacle reaches its climax at night when the moon is full; the tops of the trees are bathed in a silver light and the great lianas seem to writhe like serpents. As though inspired by the light, the nocturnal animals stage a kind of pageant for the occasion and their cries are even more frequent and more rhythmic than usual. The Andamanese themselves seem bewitched without realizing it, spellbound by the weird atmosphere.

To anyone unfamiliar with the tropics, the swift change from darkness to light and back again comes as a surprise. Night in the tropics is never silent – the eerie voices and calls, often with a strange pitch, seem to cease for a brief moment just before the sudden onset of darkness and again just before the return of the light. As night falls the fascination of the jungle grows. Even the natives feel some urge to keep their voices down, as if out of respect for some natural solemnity. (This, however, is not exclusive to the Andamanese, and it has a perfectly rational explanation. In tropical forests, and in the deserts, men speak softly so as to catch every slightest sound, a passing animal perhaps.) At dawn the birds start up as though they were tired of silence. There is no great variety of calls; most are very piercing, although still pleasing, and in the crescendo of sound which follows the dusk and dawn silences, the forest is transformed.

One thing that has helped the Onges to survive so long despite the inevitability of their decline is the climate of the islands, which is usually very pleasant and so less liable to exacerbate biological weaknesses.

Normally, the Andamans have four months of very good weather from December to March, which may extend by a few days into November and April. February is nearly always the driest month and the calmest, although there are exceptions, as I know from my own experiences when trying to land on the island. In the remaining months there is frequent rain, sometimes torrential, with raging seas, but relieved by periods of clear sky.

11: Cipriani E-3 (1951-1955) 1966 AZ2 Andamans AZ2



132 In the absence of rain the air is clear with few extremes of temperature, and mean temperatures are fairly constant throughout the year. Towards the end of March and throughout April, the thermometer rarely rises above twenty-five degrees centigrade in the shade, although it can rise above thirty-five degrees centigrade in the middle of the day. Heavy rains, which reduce the temperature noticeably, begin in mid-April; but a period of relatively dry, almost cold weather may occur at the beginning of May. The south-west monsoon reaches its peak in the middle of May, and continues to the end of November. During this period the temperature is never high, but the rains are frequently torrential; storms and terrific gales follow one after another and in some years the monsoons are so violent that the trees are completely stripped of their leaves in a matter of hours. Even so, there are sudden calms and in August there may be some very fine days, among the best of the year when they occur.

132 This climate, with its very minor variations in temperature, is explained by the geographical position of the islands. The two main islands of the archipelago run north–south, between 10° 30′ and 13° 30′ North and 90° and 92° 33′ East, rarely over forty kilometres wide. Great Andaman alone is three hundred and twenty kilometres long and Little Andaman is fifty kilometres. With the south-west monsoon the west coast faces the brunt of the storms, while the north-east monsoon hits the eastern coastline. Both hit the islands after crossing vast expanses of the Indian Ocean, but the south-west monsoon is the wetter; together they refresh the highly fertile earth.

Little Andaman forms about a sixth of this area. Its southernmost point touches 10° 30′ North and the northern tip is 10° 56′ North. On the west coast the monsoon winds are so strong and go on for so long that they have affected the growth of vegetation, beating the tops of the trees down towards the north-east, while both monsoons carry the sea spray right across the island.

132 With the continual dampness and relatively even temperature
● 139 the forests rise before one as the coastline approaches, black, savagely beautiful, unconquered and unconquerable. Like all the rain forests of the tropics they are always a lush green, except where the monsoon has stripped the trees of their leaves. Normally the trees do not lose their leaves in the winter; each species has its

11: Cipriani E-3 (1951-1955) 1966 AZ2 Andamans AZ2



own growth period, but there are so many of them that there are green leaves, and trees and plants in flower or fruit, all the year round.

There are, of course, more trees and shrubs without leaves when the heat and the dry season are at their peak, during our winter. None lose their leaves all at once, however, and in most cases they fall gradually throughout the year, accompanied by the continuous appearance of new growth. In the absence of any definite seasonal cycles, the trees grow almost continuously, so that they have no marked growth rings corresponding to the various seasons. Nor is there any sudden colouring of the leaves *en masse* with the onset of autumn; instead a permanent range of colours makes the forest incredibly beautiful at any time of the year.

Sometimes in the dry season one sees the tree known as the Flame of the Forest, one of the Leguminosae, standing out against all the others with its vermilion-red flowers, visible for considerable distances on the slopes of the hills. Rather larger than our acacia, it loses all its leaves at the beginning of January, to become covered with a mass of large flowers. I have seen similar trees in South Africa; covered with a profusion of brilliant flowers they are a wonderful sight, standing out like a sheet of flame against the sombre background of the forest round them. Even the lianas seem to respect them and leave them alone, as though fearing the slenderness of the branches, so that the trees rise like prisoners escaped by chance from the suffocating blanket of climbers all round them.

The strangling *Ficus* seems to escape them too, although lianas rage everywhere in the Andamans, their path strewn with victims. One seed of these voracious plants, left with a bird's droppings, can mean the death of a giant tree. If it lodges on a branch, or in a fork where there is a little moss or earth, it will grow and send its ropes of aerial roots down to find the earth. As soon as they touch the earth they root tenaciously, sending back energy for further growth. In a few years the ropes begin to enfold the tree, clinging to it and fusing together, till in the end there is nothing but an insidious, clinging network right round the trunk which first gave it shelter.

Every stage of this process is to be seen in the forest, from the initial unseen assault by the tiny aerial roots to the complete enveloping of the victim. Right from the first there is no escape; the

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137 chance landing of a tiny seed means inevitable death by strangulation and the new plant ends by covering its victim with its own leaves, rising above the wreck till it looks like an independent tree.

In another form this struggle between plant and plant goes on all over the Andamans. In many places, especially where the ground is flat, the foliage overhead kills the undergrowth by cutting off the light. The tops of the trees, thickened by the festoons of climbers growing over them, form a blanket high above the ground, keeping out the light in their own struggle to reach the sun. In the darkness below the vegetation is sparse and thin, and I took advantage of the fact many times on journeys on Little Andaman, and also on Bluff Island, Long Island and Great Andaman. On the steeper slopes, all thickly wooded, the sun penetrates more easily, however, and the undergrowth flourishes, particularly thorny plants, and the need to try and avoid being gashed always added considerably to the effort of struggling up the slopes.

There is one climber[1] which bears growths that have the appearance of halberds. I never succeeded in finding out the function or the purpose of these adornments. The plant is a liana of incredible length, which climbs from tree to tree right to the top, often over fifty metres up, to find the sun. Throughout its upward twists and turns the diameter of the stem remains the same, not more than five centimetres. From top to bottom it puts out shoots of varying lengths which hang straight down and it is on these that the halberds appear. Green at first, the growths dry almost to black. They are neither leaves nor spines and they have no apparent function but to grace the shoots that carry them. I measured some of the shoots which are very pliable; they taper a little, but are almost filiform, varying in size from half a metre to 1·2 metres long, with a diameter of three centimetres at the base. Around each of these shoots or spikes, the 'halberds' are arranged with absolute symmetry, in opposite pairs, each pair set at right angles to the previous pair. The 'wings' of the halberds are not more than three centimetres wide, and the overall length of each pair is about six centimetres.

824 312 Among the lianas are some valued by the islanders because they provide a clear liquid which has a pleasant, rather bitter, vegetable

[1] The author gives no name for this climber, which has been tentatively identified from the description as the rattan, or climbing palm.

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taste. The liquid content of these stems is so great that it makes them extremely heavy to carry. These lianas are very common all over the islands and anyone who knows them need never die of thirst. To get at the liquid one only has to break the stem and put it to one's mouth; if one puts a receptacle under the break, a litre or so of liquid can be obtained in a matter of minutes. When the first strangers came to the archipelago, the Andamanese watched them tear down parts of the forest, including these lianas, and tried in vain to protest at the vandalism. No one understood their protests, but they were right.

The forest abounds in trees whose fruits in season form an important source of food for the islanders. One is the so-called jackfruit, *Artocarpus communis*, which here grows wild, though various species are cultivated all over Asia. The fruits, which appear on the thickest branches as well as on the trunk, are smaller in the wild variety, rarely weighing more than thirty grams, but the yield is enormous and the islanders enjoy them for months, especially from March to May. The Onges call them *bulundanghe*, and roast them in hot ashes till the hard pulp and seeds are eatable; the latter, the size of a hazelnut but tougher, are the best part.

Another useful plant is the *Pandanus*, or screw-pine. On Little Andaman extensive areas are covered with nothing else, making progress very difficult owing to the twisting roots and the spines on the long, tough leaves. It seems to prefer the coastal areas, particularly the marshes, where it often grows into an impenetrable jungle. There are at least two species, one of which is gregarious. The other, which grows as isolated specimens, is longer leaved, with bigger fruits and stems like candelabra, standing up on an arch of roots, as though on stilts. With the leaves of this variety, fluted and easy to arrange like roof tiles, the Onges can quickly improvise a waterproof covering. The young leaves provide them with ornaments which they wear for their dances, while the pulp of the fruit, which looks rather like a pineapple, perfumed and delicately flavoured, is nutritious though somewhat stringy.

Along the coasts where there are no *Pandanus*, one very often sees something very different – mangroves. The islanders use the wood for their canoe floats, and for fixing pegs (see p. 122) and the supply is unlimited, as the growth and spread of the mangroves are assured by a number of factors which have made them one of the best

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137 adapted trees for the waterlogged areas in which they are exclusively found. The banks of all the river mouths and a considerable distance upstream are lined with the green of the mangroves, their trunks rising from the arched network of roots.

In the Andamans there are at least ten mangrove forests, all fighting for one thing: more and yet more vital space. This they win either directly, by sending roots out underground far ahead, or indirectly, by encouraging the building up of more land, which they then occupy. Great banks of mud are built up against the network of roots, sometimes miles into the sea, a necessary prelude to their irresistible spread. To help the formation of the dam mud some species send a mass of roots down from the trunk into the water, while others build dams of roots or send out horizontal shoots from which trunks sprout into the air and roots plunge down into the water.

One strange habit interested me very much. I saw roots thirty or more centimetres long growing not down but up, sticking into the air like a human hand with long fingers. These roots are known to botanists as 'pneumatophores', and the species which produce them act as the advance party for other species, building up a new plantation and snatching a few more miles from the sea. One might call it a fine example of solidarity among different species.

In these species tufts hang down from the leaves like green fingers about eighteen centimetres long. They are in fact great viviparous seeds, admirably adapted to progressive spread over marine areas, designed specifically for the purpose of sure and rapid growth wherever they alight, which may be anywhere. Floating upright in the sea, sticking half out of the water, their weight is so distributed that the growing tip is clear and the seeds take root the moment they arrive in shallow waters where there is mud below. The new plant grows rapidly, sending out miniature pneumatophores almost as soon as it has taken root.

In species like the well-known *Rhizophora conjugata* the seed germinates while still on the parent plant. If it does not become detached at once it sends out slender but strong roots a metre long. They too will float on the water until they can take root in the mud.

With all these means of propagation, even the fury of the sea is not enough to restrain the growth of the mangrove swamps. Slowly and unaided they are increasing the area of the islands with

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their arched vaults of roots, strong enough to bear a man's weight without bending. In some places I had to travel hundreds of metres across them, clambering from arch to arch, before I could reach dry land and sweeter air (the air in the swamps is foul with the stench of dead fish, crustacea and debris of all kinds from the sea, caught in the network of roots). Among the roots swarm crabs of all kinds, including the blue crabs, while kingfishers and other brilliantly coloured birds dart gaily in after the easy prey.

Near the mangrove swamps, in the mouths of the rivers, giant fronds of the Nipah palm stick up out of the water here and there. The feathery fronds, standing several metres high, are used by the crabs to climb out of the water and tiny toad fish, (see p. 133) equipped with both gills for life under water and lungs for air breathing, like to cling to them for an airing when there are no stones handy. Every day these fascinating little creatures stay in the sun for hours before dropping back into the waters of the swamps and in some places they are everywhere, always ready to jump out of the water on to a convenient projection to have a look at what is going on.

The Andamans, with their luxurious growth of vegetation of all kinds, are an ideal place to study plant dispersal. I have already mentioned the *Ficus* and the mangroves, but there are many other equally fascinating plants. Some used by the Onges for the production of fibres are widely distributed from India to Malaysia and the Pacific. Among these are *Gnetum gnemon* and *G. macrocarpum*, generally spread by the doves which flourish undisturbed on Little Andaman. In April, when the winds come, swarms of curious elongated parachutes equipped with an air trap which causes their spinning flight are blown from *Pterocarpus dalbergoides*, which provides the well-known *padàk* wood. The weight of the seeds (the size of a pea) at the base of the parachutes and the effects of the air trap give them a horizontal, screwing flight which carries them far from the parent tree. I have seen these parachutes in the sea, hundreds of kilometres from the nearest land. Mathematically designed by Nature to trap the right amount of air, the tiny parachutes are barely ten centimetres long. Their efficiency is self-evident – *padàk* is one of the most widely spread trees in the archipelago, in the Nicobars and far beyond.

In the stagnant pools on Little Andaman I found a species of explosive fungus which closely resembles, if it is not in fact identical

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with, its European counterpart. The spores, attached to a plume barely visible to the naked eye but wonderfully constructed, are carried into the sky by the air currents rising from the pools in the hottest part of the day and travel considerable distances.

One could fill whole books with the botany of the islands but here I can record only a few examples. One I cannot leave out is a species of *ipomea*, or Morning Glory, which flourishes on the sandy beaches in the lee of the coral reefs. The local varieties are not climbers, but spread over the ground in a compact lattice of stems, fairly well able to withstand the onslaught of wind and water. They prevent coastal erosion, both by the protection which their covering of strong stems and leathery leaves provides and by holding fast loose pieces of coral. These *ipomeas* are found only in the Andamans, some with purplish flowers and others white. They surround the communal huts along the coast, carpeting every free inch of ground cleared by the Onges of other and more destructive vegetation. They make no attempt to cut down the *ipomea*, as the compact growth helps their canoes to slide up and down the beach.

Along the coast of Little Andaman one sees rows of beautiful casuarinas (the Whistling Pine) especially a little to the north of Bugong Creek. From out at sea they stand against the skyline like rows of Italian cypress. They never reach the height of which they are capable, owing to the wind and the nature of the terrain; apart from a small stony, hilly area in the interior, of ancient continental origin, the island is really nothing more than a huge coral bank lying against these hills, which in the course of thousands of years has become covered with vegetal mould of no great depth. Trees are therefore forced to send their roots out horizontally, and the strong monsoon winds can easily uproot the tallest of them. After every storm one sees huge trunks lying on the ground, their wide net of roots sticking high into the air. Only a few of the giants in the interior manage to resist, protected by their neighbours. On Great Andaman, where there is more land of continental origin, deep rooting is possible and the forest presents a very different picture.

Much has already been written by others about the epiphytes, among them beautiful ferns and even more lovely orchids, which cling desperately to the trees in their struggle to reach the light. All are closely related to the flora of Burma, Malaysia, and Sumatra,

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and particularly of Oceania, but not with that of the Indian peninsula – a fact which is highly significant in any reconstructive study of the migration of flora and fauna to the archipelago.

The most recent phase in the spread of vegetation within the Andamans is less than a hundred years old; it began on Great Andaman, but none of the species has yet reached Little Andaman. The coconut has reached it during the last few years, but when I was there, there were not more than five wild palms in the whole island. The original coconuts must have floated from Great Andaman, or even the Nicobars. The Onges at once realized that they were edible, and called them *marele*. Now, however, there is a plantation of over five hundred trees to the north of Labanar, which I established by degrees on a number of occasions as a gift to the Onges.

The absence of any cultivated plants on Little Andaman led me to try pawpaws and bananas, as well as coconuts. In 1952 the Governor himself suggested a plant whose leaves are said to cure ringworm, so widespread among the Onges. The Onges, however, were not remotely interested, nor were they any more interested in the pawpaws and bananas. The pawpaws were left to lie on the ground and groves of young plants sprang up, far too close together, crowding the original tree and not sturdy enough to fruit. It was useless to show the Onges what to do. The bananas would have grown well, but their leaves were ripped to pieces by the storms. Possibly they would fare better in Great Andaman, where the hills would afford some shelter from the wind.

A rather different result, but equally unfortunate, followed the importation of grass seed into Great Andaman to improve grazing. The seed, imported from Europe, must have been contaminated with *Mimosa pudica*, which has spread widely, as it did in India and the rest of southern Asia, and within a few years has destroyed the grass so widely and become so much of a pest that in some areas it is doubtful whether it can be eradicated. The area round Port Blair is full of it, but for the moment Little Andaman remains free.

Culturally, the peoples of the Andamans remain today, unlike their kin in Malaysia and the Philippines, at a level almost identical with that of their ancestors thousands of years ago. They represented then, and in great measure represent today, a pure hunting and

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were approaching an Onge camp. Everywhere they go they are accompanied by flies of all sizes, and in Little Andaman the swarms are so bad that the first stranger to land called a river after them, Bumila Creek, or fly river. Their flies betray the Onges long before the barking of their dogs – no human voice ever betrays their silent presence.

On Little Andaman today the Onges' tacit divisions of territory are of little importance, so heavy has been the fall in population, but they still keep out of areas belonging to other 'huts', even if the huts themselves have been abandoned. I never saw any disputes over territory, or the ownership of the area in which a pig was caught (and hence ownership of the pig). The Onges who accompanied me, possibly encouraged by the prestige value of a European with them, hunted wherever we went without anyone raising any protests. Nevertheless, I always took the precaution of giving anything I or my Indians took to the Onges of the nearest hut, invariably much to their delight.

Contrary to established opinion, communal huts on Little Andaman are not found only along the coasts; the majority, and certainly the best constructed, are in the interior. Togalanghe is one, and there are a number of permanently abandoned temporary camps near it.

Both the permanent and temporary huts or shelters of the Andamans resemble those of the Semang. The latter are extremely simple, especially in the dry season; there are no walls and only a very sloping roof of leaves, high at the front and very low at the back, the beds being put so that the feet face the low part of the roof. With the Semang and Aeta the beds may be made of bamboo; this is never the case in the Andamans, as there are no large bamboos in the archipelago (Brown was wrong in this respect. The few slender bamboos on Little Andaman are only usable for making drying racks, which are found only round the hut at Beniabol in the south. As the people were away when I went there, and the site was consequently completely deserted, I was unable to establish visually what they dried, but traces of fish, particularly pilchards, were indication enough.)

These temporary shelters are put up extremely quickly. Two poles less than two metres long for the front, and two more, thirty to forty centimetres long, for the back, are fixed firmly into the

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7 An important feature of the islands is the way in which the forest comes right down to the water's edge

8 In the monsoon season, trees are frequently uprooted in this manner

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[facing P. 66, F]

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9 The bow and arrow is the main weapon used for hunting; in this photograph the archer has the long arrow harpoon used for spearing large fish

10 Fishing in the coral shallows

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[facing P. 66, G]

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wings suddenly dropped off along a predetermined line of fracture, 136
two to the left and two to the right. The whole process seemed to be some instinctive reflex movement triggered off by coming to land after the flight from their original hill. Then the termites began to walk quickly as though they had never had wings.

The casting of their wings is the signal for the males to look for the females. There follows a long nuptial 'march' culminating in the union of queen and males, identical with what I had seen among African termites, thousands of miles away.

Wherever they are, termites have a considerable effect on the [137] ●
vegetation; some plants flourish with the constant upheaval of the earth by the termites, while others cannot thrive in soil which is constantly turned over. Termite hills may consequently be quite bare of vegetation or covered with a dense jungle, according to species and location. It is most unwise to disturb a termite hill. A horde of defenders instantly assails the enemy, attacking him remorselessly with pincer-like jaws; if an attacking termite is pulled off its prey, the abdomen comes off in one's fingers leaving the head still attached to the victim, the jaws still biting viciously. Repair of the damaged hill begins immediately it is disturbed, tightly packed hordes of workers pouring out of the nest to the damaged area. Somehow news of the disaster spreads like wildfire throughout the hill, however large it may be, and like the red ants they obey implicitly some unexpressed order, following an instinct the mechanism of which is still quite unexplained.

The first impression of these hordes of repair workers is one of utter confusion, but in the mass of termites bumping into each other and apparently rushing about aimlessly each is motivated by one thing only – the repair of the nest as quickly as possible. Since termites need cover and darkness, this is done preferably with earth brought from inside the nest; but if necessary gangs of workers, chosen by some unknown mechanism from among the milling hordes, come out into the baking sun, contrary to all their instincts, and work from the outside, sacrificing themselves for the community.

Much remains to be learnt of this weird compelling mechanism, and I hope that others will be able to continue my observations in the Andamans, where there are endless opportunities for the uninterrupted study of these and other insects.

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less plentiful and containing a great deal of wax, and is greatly prized by the Onges. The darker bees, common in China, Celebes, Borneo and beyond, build their nests in cavities in the rocks, or in tree-trunks. Their honey, darker and with less wax, is more plentiful, but not so fine; when there is enough of the golden honey the Onges ignore the darker variety.

Few of the fruits on Little Andaman contain much sugar, but the Onges eat more than enough honey to compensate any deficiency that would otherwise occur. Whatever the fruit in season, men, women and children climb happily about like acrobats, hanging in the trees to get at it and the honey that goes with it. To chop the tree down is, of course, easiest and the obvious first choice for any Onge. Failing this, and their hooked poles, they climb up the nearby lianas into the branches, or walk up the trunk – an easy feat for them with their very long arms and almost prehensile toes.

Although there are arak nuts and betel leaves in the forest, the Onges ignore them. They are the same variety as elsewhere; *Areca catechu* and *Piper betel*. The Nicobarese are so addicted to them that many have lips and teeth hideously deformed as a result, but this is quite unknown among the Onges, contrary to earlier reports. The appearance of addiction in the Nicobars may have occurred after the separation of the peoples.

With all these fruits the Onges consume vast quantities of honey from the two species of bee, *dorsata* and *nigrocinta*. During the rainy season they can only get at the darker, poorer honey of *nigrocinta*, which builds nests under boulders or in crevices of trees or rocks. The Onges' real honey orgies occur, therefore, in the dry season, when the honey birds (Indicationidae), common in Africa and all over Asia, lead them to the trees where the golden honey of *dorsata* is hidden.

When one of the Onges finds a nest of bees he puts a mark on the rock or tree as a sign of ownership. None of the others would then dare to take possession of it, for fear of punishment by the group,[1] but when the time comes to take the honey everyone helps in the hard work of getting at the nest and opening it up. On one trip from Labanar to Togalanghe, on 19 March 1954, the Onges pointed out over twenty *Nigrocinta* nests to me, all reserved ready for use

[1] However deep in the forest a crime is committed, it will inevitably be discovered in the end, and punished by banishment from the community.

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sweet, and delicately flower-scented. No one waited for the climber to reach the ground. With my men and the Onges the party numbered twenty-two in all, every one of them hungry. The log was thirty centimetres across, and besides the combs there was a good four inches of honey in the bottom, but even so I only managed to set aside two litres for the man who did all the work, before the combs had all disappeared and the remaining liquid as well. The whole lot was gone in a matter of minutes.

What puzzled me was how the bees were quietened. I knew from personal observation that both the varieties of bee on Little Andaman could and did sting badly, and I knew that the Onges I had watched had done nothing deliberately to avoid stings.

In Man, the olfactory sense can detect minute amounts of iodoform, for example, but we are completely insensitive to other substances strongly repellent to flies, mosquitoes and other insects. Some similar mechanism must also operate in the case of bees. The Onges cannot understand anything of this, but they must possess some age-old, almost intuitive and innate knowledge, which they apply unconsciously. At some time someone must have found that the juice of a certain plant they call *tonjoghe*, apparently inodorous, has the power of deterring bees, and this knowledge, handed down from generation to generation, is applied with delightful simplicity.

In the forests of Little Andaman there are bushes of *tonjoghe* everywhere, and the Onge who is to go after the honey simply grabs a handful of the leaves and stuffs them into his mouth. With some vigorous chewing they are quickly reduced to a greenish pulp, which is smeared all over the body, particularly the hair. Another huge mouthful chewed on the way up and spat at the bees to make quite sure that they will be deterred even to the point of failing to attack the unsmeared bystanders. I have myself tried the leaves, and like the Onges found them quite tasteless and odourless. The Onges say that the 'magic' was revealed by a seer, and it is a curious fact that of all the luxuriant vegetation on the island only this one plant is effective.

I am unfortunately not in a position to say definitely to what species *tonjoghe* belongs. I took some plants to Port Blair, where they were planted in the Governor's garden; unfortunately before they could flower the then Governor left, and a new gardener

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thought they were weeds and pulled them up. I never managed to see the plant in flower in the wild state, as this occurs at the height of the rainy season, and as no final definition is possible in the absence of the flower it remains unidentified.

The Onges take full advantage of the plant's properties as a bee-deterrent and in mid-March they eat honey, paint themselves, and dance, twenty-four hours a day. During these orgies I have seen a group of about sixty Onges demolish in a few days ten pigs and a dozen large, wooden vessels full of honey, with basket after basket of fish, caught every night by the women, who were apparently not in the least tired by the long daily treks into the forest after the honey. I can never look back on the Onges without a feeling of profound respect for their powers of digestion!

Yet another source of food for the islanders is the cicada. On Little Andaman there are a few species a little larger than the European variety and others rather smaller. The Onges collect the pupae as they emerge from the ground, usually in the mornings, and roast them as a great treat. They are actually very clean insects, which develop slowly under the earth over a period of years sucking lymph from the roots of the trees. When they emerge from the ground the pupae become leathery, but this presents no problem to the indomitable teeth of the Onges. Inside the cicada chrysalids are a mass of delicate tissues, so white and clean that one can understand the Onges' predilection for them.

On Little Andaman the cicadas chirp intermittently, with long silences; most of the day one hears nothing of them and when they suddenly start up the Onges fall absolutely quiet, terrified of frightening them away and losing their chrysalids.[1] In a few moments the whole forest suddenly echoes with a chorus of cicadas, as they all start up as one and then, a minute later, fall silent. Their intermittent chirping is not confined to the Andamans; it is a feature of several species throughout southern Asia. At Golpahar when I was in the middle of the forest excavating kitchen-middens I heard cicadas start up every day at 6.30 p.m., and then stop until the following day. In the mountains of South India, on the slopes

[1] The Onges do not seem to share the superstitions reported by Man and Brown among the Arioto, who appear to believe in fantastic connections between cicadas, the sun, and storms.